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CAEP REVIEW

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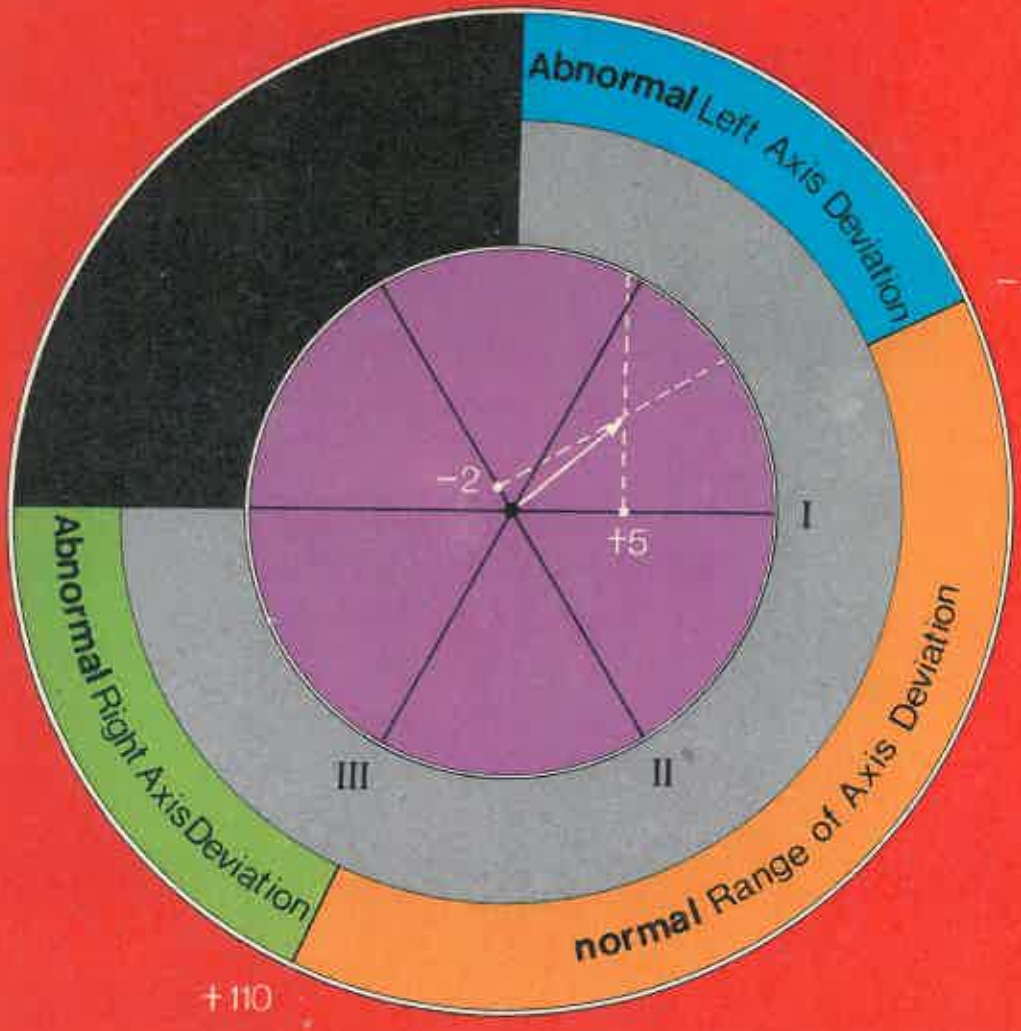

ECG Vector Analysis

CAEP REVIEW

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President's Notebook

In this, my first Presidential report, I would like to thank the membership for giving me the opportunity to act as your President in the coming year. It is indeed an honour and I will make every effort to fulfill the responsibility to the best of my ability.

I want to extend my deepest gratitude, to the past-Presidents of C.A.E.P. for the considerable time and effort they have expended on behalf of the Association. Having worked with these individuals, I can assure you that their hard work, sometimes frustrating, sometimes rewarding, has been the backbone of C.A.E.P.

One of the most time-consuming chores of my predecessors was their involvement in deliberations regarding specialty recognition. Certification is now a reality. For their efforts in this milestone, they deserve an accolade from all of us. However, their efforts must be continued by the rest of us. With the exams now on the horizon, there appears to be a number of emergency physicians across the country who, although eligible to sit the examination, feel it would serve no purpose in their clinical practice. If we want to consider emergency medicine a specialty we must qualify by completing the last step, certification. I would urge all eligible candidates to seriously consider the benefit of sitting the certification exam not only to themselves but to Emergency Medicine. Although a lot of time and hard work will be involved in preparing for these examinations, I am sure it will be a worthwhile exercise.

We must now look to the future of the Association, its course and objectives in the years to come. What are our priorities? How will time and physical resources be allocated to best serve the Association?

As you may recall from the last Review, a long-range planning session was held and attended by your Executive and some Committee chairmen to deliberate the future of C.A.E.P. I will relate some of the thoughts generated by this meeting to outline some potential goals of the Association.

In priorizing issues to be considered in the coming year, the foremost was image, of both emergency physicians in particular and emergency medicine in general. In meeting with several groups of emergency physicians across the country, the executive has found that self-image especially related to hospital administration and peer groups was of concern in some centres. In addition, the lay community lacks awareness of the discipline of emergency medicine. I am sure all of us have been asked if we were interns on duty or where our practice was when we weren't working in the Emergency Department. We have identified a need to educate peer groups, hospital administrators, and the public in general. Suggestions included a public relations campaign using public service announcements sponsored by C.A.E.P. A.C.E.P. has indicated its willingness to make these PSA's available to us. In the lay community, this would begin to provide an identity to emergency physicians. In the medical community, awareness might be initiated by publicizing specialty recognition as well as outlining career profiles of emergency physicians. Administrators must be made aware of patterns of practice across the country with the characteristics of the successful groups.

Another issue felt to be important to emergency physicians was economics. There is a wide disparity in incomes of emergency physicians (Lane, PL, George ME: CAEP Review 2:62-64, 1981.) and a need to look further at the components of the economics of emergency medicine. This information must be shared with our colleagues. By improving economic awareness and the economic base of emergency physicians, we enhance the stature of emergency medicine.

The training of residents represents the future of emergency medicine as a specialty. There have been extensive cutbacks in the residency positions across the country. As a young discipline with programs still waiting accreditation, emergency medicine is open to being among the first of programs losing training positions. This is a problem currently and may continue to be in years to come. Manpower surveys demonstrating the existing and future needs may be helpful as a starting point in arresting this trend.

The final issue of importance which I wish to share with you is that of communication with the membership. How often does the Executive of an organization tend to lose sight of the attitudes and feelings of its membership? There was extensive discussion at the planning session questioning how well the Executive represents the membership. Certainly, in determining priorities, the membership should be first and foremost in the minds of the Executive. To this end, I will be instructing the Policy and Standards Committee to conduct a survey of the membership with respect to long-range planning and priorizing goals and issues relating to Emergency Medicine. I would ask that all members respond to this questionnaire and express their views freely. Should you wish to have a wider forum, the Review is always available to publish members' views in the Letters to the Editor section.

In closing, I want to again thank you for your support in electing me as President. I hope to carry out your wishes in leading CAEP in the coming year. I look forward to continuing communication with the membership and hope to have an opportunity to meet as many of you as possible.

Rocco Gerace, M.D.
President

Letters to the Editor

A linguistic lesson

Dear Sir,

I wish to propose a clarification of terms regarding physicians who practice our discipline.

First, it is, I believe now accepted terminology that a physician dedicating all of his or her practice time to Emergency Medicine, be called an Emergency Physician. The discipline extends far beyond the "room", involving pre-hospital care, community disaster planning, citizen CPR, hospital committees, etc. Truly, Emergency Medicine has outgrown the "E.R." and Emergency Physician is the more appropriate term.

I would urge caution adopting the somewhat ugly mouthful "Emergentologist" to apply to those newly certified in Emergency Medicine. Similarly, the name Casualty Officer is inappropriate, inaccurate and out of date except where it may pertain to the casual or itinerant practice of medicine in the Emergency Department.

Yours sincerely,
David M.C. Walker, M.D.

Dear Sir,

Dr. Les Vertesi's article "Will the Real Paramedic Please Stand Up" in the January 1982 issue of the CAEP Newsletter came closer than he intended to in outlining the problems facing modern nursing. The major problem facing today's nurse is not any minor issue such as the relative roles of nurses and paramedics, but with the unraised consciousness about nursing practice as it is today and the underlying attitudes toward nursing itself. When Dr. Vertesi states that B.C. nurses "are content to leave the actual work to the paramedics" because the "reality of paramedic work has little to do with the glamour that the popular image portrays", nurses are justly flabbergasted. My own contact with the B.C. nurses indicates that nurses are more likely to be concerned with the narrow restrictive nature of the paramedic role than with its lack of glamour. The "feudin' cousins" exist but only as a minority. The real professionals are developing a working relationship and demonstrate it both inside and outside hospital settings.

The issues centered on the nurse/paramedic problem in Ontario have little to do with the "rapidly expanding career garden of Advanced Prehospital Care", those aspects of Dr. Vertesi's article are not the unsettling, inflammatory ones.

Nursing has entered a revolution and Dr. Vertesi, in his article, seems unaware. Our role has gone through considerable change in the last ten years and our contribution to health care is still changing. Nursing still remains focused on how a patient responds to his or her health status, how that status affects his/her lifestyle and in assisting that person to cope with his or her deficits. But at the same time, nurses are increasingly becoming educators and decision-makers in health care. Our role is an interdependent one with other caregivers, but it is also an autonomous one. Dr. Vertesi should understand the nature of interdependent autonomy, it is a status physicians have enjoyed for years. Dr. Vertesi perceives that frustration with our professional limits drives nurses to usurp the role of the paramedic and hints that the physician's role might be a more attractive one to nurses. Nurses who are impatient and disgruntled with the pace of progress and change leave the profession. Some become "nurse bashers". Others remain to grumble. Most of us who choose to remain in nursing are committed to make needed changes and to reflect the directions of our growth to others. Our battles are those which are fought by other professions and are nothing to be ashamed of. They show growth and energy rather than inflexibility and stagnation.

Meanwhile, nurses want input in determining health care decisions. Any change without significant input results in anxiety, defensiveness and anger. For Dr. Vertesi to state that the physician "can tip the scales for victory" smacks of wielding the big stick. There is no place in team work for scale tipping. We all need to discuss and negotiate if we are to meet the challenges of the increasing complexity of health care.

The Dr. Vertesi I thought I knew left me surprised and somewhat confused by the statements in his article. Did he really mean what he appeared to say? Never mind the paramedic, will the real Dr. Vertesi please stand up.

Gina Dingwell, R.N.
August, 1982

Author's reply

I must say that I am surprised by the reaction my article seems to have evoked. There is an old politician's axiom that says "Say nothing and you won't get hit!" At the risk of sowing further misunderstanding, I am afraid I must reply.

To begin with, my original intention in writing "Will the Real Paramedic Please Stand Up?" was not to make any comment about the nursing profession as a whole. I am clearly no expert on nursing development or practice, and any opinions I might have in this line are bound to be ill-informed and frankly indefensible. However I am certainly not unaware of the "revolution" in nursing. I agree completely with Ms. Dingwell's description of "interdependent autonomy" as it applies to nursing practice. In my years of professional contact with nursing I have been impressed with their concern for the patient and for the functioning of the system as a whole. Frankly, I don't think Ms. Dingwell and I have any major disagreements here; my remarks were simply not directed at nursing in general.

Ms. Dingwell admits that the "feudin' cousins" do exist, and it is with this minority who wish to "annex" the prehospital care field into nursing, that I have taken issue. This is not a "big stick". Clearly emergency physicians have the same right (some would say

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obligation) to speak up about hospital care as do nurses.

I couldn't agree more with Ms. Dingwell when she speaks about the need for input. The success of the B.C. program is due in large part to the input at the "policy" level received from nursing throughout the development of the program. Those who were present in those days will remember that this was no accident: the system was designed to accept input from several other sources as well.

I'm sure it is possible to find many meanings in the article that were never intended. Nor is there total agreement about its central theme. But there should be no mystery here; anyone who is suspicious of my remarks and who wants to know what I really think need only examine the paramedic program in B.C. into which I have had formative input for the last eight years. I am willing to stand on my record.

L. Vertesi, M.D.

From the Editor

If you want to win friends and sleep nights, don't ever become an editor. For the past year, Dr. Lynne Fulton has served as Scientific Editor of the Review. Readers will agree, I'm sure, that the articles over the year have reflected the tremendous amount of work involved, as well as the superb quality of her work.

To date, we have published approximately 50% of the material submitted, which is low among Canadian publications, but about par internationally. Much of what is rejected is inappropriate for our journal, and would be of little interest to our readers. However, a good portion is rejected because it is simply a poorly constructed study or the results cited are inaccurate or misleading. I have been more than happy to have Dr. Fulton write those "Dear John" letters.

However, probably the most draining and time consuming job has been suggesting revisions to articles submitted. Thus far, every scientific article published has required revisions – some minor, some quite major. As can be imagined, after an author has spent painstaking hours of work preparing an article for submission, the letter he/she receives suggesting a major redraft is not always enthusiastically received. And often, a polite suggestion here or there falls on deaf ears, and the editor has had to do a complete re-write herself. She has, with a few of the articles I'm sure, spent more time on revising and redrafting than the author initially had in preparing the article.

To their credit, authors of Review articles have largely agreed with Dr. Fulton's suggestions and have redrafted their articles accordingly. In many cases, I think, they have appreciated the thorough critique they have received, and are able to again have a fresh look at their work as a result.

Unfortunately, Dr. Fulton has resigned as Scientific Editor. With the September meeting of CAEP in Calgary, she has become the 1983 Annual Meeting Committee Chairperson for the June Meeting in Toronto. This will be a major job indeed, and she wisely has decided she cannot do justice to both. She will be sorely missed at the Review.

We have been able to coerce and cajole two very prominent names in Canadian Emergency Medicine to share the duties as Scientific Editor – Drs. L.E. Dagnone and David M.C. Walker, both of Kingston. Both founding members of CAEP, Dr. Dagnone has "parental status" with Emergency Medicine in Ontario, and has been on the Editorial Board of the Annals of Emergency Medicine for many years. Dr. Walker has been involved with the CAEP Executive for many years, including a very crucial sixteen months as President. He is currently Chairman of the Section of Emergency Medicine of the Ontario Medical Association. We certainly look forward to the contributions of Dr. Dagnone and Dr. Walker as the new Scientific Editors of the Review.

By now, CAEP Review subscribers (among others) will have received the special August supplement, "Emergency Units in Hospitals." This document represents the consensus of a small working group convened by Health and Welfare Canada. It is one of a series of guidelines on special units in hospitals that the Federal Government has produced.

Those who have had the opportunity to read the guidelines will, I think, agree that they are relatively comprehensive and appropriate. They should be particularly useful to those involved with planning and administering Emergency Departments across the country. They also should be useful in that very difficult but crucial task of categorizing hospitals.

I hope and trust that the guidelines will stimulate discussion and likely, controversy. Readers are specifically invited to use the pages of the Review over the next year to air their opinions and comments regarding the guidelines. Correspondence should be directed to myself and we will endeavour to publish as many letters as possible.

Emergency Medicine Residencies: An Endangered Species?

We are constantly being bombarded with news items regarding economic unrest in the health care field: nurses' strikes, physician walkouts over fee schedule negotiations, closure of hospital beds or hospitals, etc. In this, a time of increasing demands on the dwindling health care dollar, residency training programs are hardly considered a priority item. Already across the country residency training slots are being cut back in number. When faced with funding cutbacks, well-established programs will remain relatively intact, while newer, smaller, or peripheral programs will be cut (witness the London experience – CAEP Review April 1982). This is especially a problem since Emergency Medicine is not yet a separate university academic department in most if not all medical schools. Hence the lack of ability to lobby effectively at the dean's office level or at the political level.

Emergency Medicine is now a Royal College specialty with a three year post-internship training requirement. Many of the present residencies are two year programs. Will they be able to find residency positions in order to prolong their program by one year? Will they be granted the same total number of residency slots but be reauired to spread these positions over a three year program? Will the already few residency positions in this country be cut back even farther? How secure are residents just starting programs now in being able to complete their programs?

Dr. David Walker carried out a Manpower study to determine the need for trained emergency physicians in Canada. He demonstrated that the projected number of trained emergency specialists will come nowhere near fulfilling Canada's requirements.

I fear for the future of Emergency Medicine residencies. I fear that they will be squeezed out of existence or severely threatened. How does this situation affect you? Well, if you are a junior resident will you be able to finish your program? If you are in the second year will your program be able to expand to a third year so that you can meet the Royal College requirements? If you are a medical student or an intern, will you be able to get into an Emergency residency in this country at all?

What can you do? Well, stop wringing your hands or burying your head. There are several strategies that can be employed in what will amount to a public relations campaign. The first is to maintain a high profile within the hospital, in the ER, on the wards and in teaching sessions. This will bring attention to the classical specialties that Emergency Medicine is not just a flash in the pan. Second, emergency residents should make a point of taking a stand on public issues having to do with emergency health care. Concerns such as prehospital care, disaster panning, free-standing emergency clinics, citizen CPR. Support from those in training would be welcomed by those provincial associations with sections of Emergency Medicine. Bringing these issues to the attention of both the public and the politicians is the name of the game. At a recent long range planning meeting, the CAEP executive ranked Residency training programs as number two in importance. CAEP is the voice of Emergency Medicine in Canada. As residents I urge you to join CAEP and make your concerns known to your representatives and most importantly to the Executive. Urge them to lobby strongly in the universities, in government. We must become vocal in our demands that Emergency Medicine Residencies not only survive but flourish.

Since the last issue of CAEP Review a questionnaire was sent in June to the Resident Representatives for all residents to answer. This questionnaire was to give the Resident Committee some idea of the direction that it should take and the issues that it should concern itself with. Unfortunately not all residents responded and some programs were conspicuous by their lack of response. Thanks to all of you who did take the time to answer.

50% of residents polled responded. The results are as follows:

Circle the desired item. More than one item may be chosen. Additional comments welcome.

Resident Committee Questionnaire

I. Selection of Resident Representatives/Resident Chairman/Resident Vice-Chairman:

(a) Status quo – % favouring	53%
(b) Election from the general resident body (one resident = one vote)	26%
(c) Chosen as in (b) but a formula is required to equalize the voting power of large and small programs	0%
(d) Chosen by Resident Representatives from among themselves	20%
(e) Other_____	

II. Role of the Resident Committee:

(a) Status quo – ie – advisory to CAEP executive on Resident matters	72%
(b) Information exchange re residencies	72%
(c) Liaison with CAIR/EMRA	53%
(d) Information exchange re job market	86%
(e) Resident input into the organization of CAEP annual conference	66%
(f) Representation on Training and/or Examination Committees of the College of Family Practice and the Royal College	66%
(g) Other_____	6%

III. Communication of Resident's Committee:

(a) General Residents' meeting at annual CAEP conference only	33%
(b) Resident Committee (Reps + Chairman) to meet once a year + annual CAEP conference meeting	46%
(c) Resident Committee to communicate via 1-2 telephone conference calls/year	46%
(d) Other_____	20%

IV. "Residents' Corner":

Who should be responsible for contributing articles?	
(a) Resident Chairman	6%
(b) Resident Reps by rotation	26%
(c) Any interested Resident	40%
(d) Any combination of the above	60%

V. To what extent above the annual CAEP Resident Member fee would you be willing to fund extra activities (eg as per Question III)?

(a) 0	13%
(b) $25 or less	66%
(c) $25-50	20%
(d) $50-100	0%

In summary:

Item 1: Over half the residents felt that status quo was acceptable with the other half split between choosing a Chairman by vote of the general resident body and choosing by vote of the Resident Representatives.

Item 2: All these items seemed to be important, especially job market information exchange, residency program information exchange and advising CAEP executive in resident matters.

Item 3: The general feeling that Resident Committee communication needed to be improved. However, the vote was split with some interest in conference calls or one other meeting besides CAEP Annual Meeting per year.

Item 4: Most people felt that any combination of residents should be involved in contributing to "Resident's Corner".

Item 5: The majority seemed willing to pay up to a maximum of $25 above the present Resident CAEP dues, provided that it resulted in improved communication.

Ingrid Vicas
Chairman, Residents Committee

The Evaluation of the "Stroke" Patient in the Emergency Department

by Roy Purssell, M.D., Brenda Chartier, Wayne Smith, M.D.*

Abstract

A retrospective audit was performed on the charts of 90 patients diagnosed as having suffered a cerebrovascular accident by a physician in the Emergency Department. The diagnosis made at the time of initial assessment was compared to the final diagnosis, and was found to be incorrect in 17% of the cases. In over 25% of these instances, the final diagnosis was potentially treatable, when the initial diagnosis was not.

From this study it is recommended that all patients with the diagnosis of CVA should have the following tests performed in the Emergency Department: CBC, coagulation screen, ECG, chest x-ray, CT scan, and, if necessary, lumbar puncture. EEG's and skull x-rays were found to be of little use diagnostically.

Résumé

On a procédé à une vérification des dossiers de 90 patients chez qui un médecin de l'urgence avait diagnostiqué un accident cérébro-vasculaire. Après l'avoir comparé au diagnostic final, on a constaté que, dans 17 pour cent des cas, le diagnostic initial était inexact. Dans plus de 25 pour cent de ceux-ci, le diagnostic final, contrairement au diagnostic initial, indiquait une condition potentiellement traitable.

Il est donc recommandé de procéder aux tests suivants en salle d'urgence chez tous les patients présentant un diagnostic d'AVC: formule sanguine complète, coagulogramme, ECG, radiographies pulmonaires, tomo-densitométrie et, si nécessaire, ponction lombaire. Les EEG et les radiographies du crâne se sont révélés de peu d'utilité pour déterminer le diagnostic.

Introduction

Patients with the diagnosis of "cerebrovascular accident" present a dilemma to the Emergency Physician. Although there is an abundance of literature on the usefulness of various types of diagnostic tests and modalities of treatment for these patients, there is little information of use to the Emergency Physician, who must decide which tests are necessary, whether these tests are required on an urgent basis, if treatment must be started immediately, and if the patient requires a hospital admission, or could be investigated as an outpatient.

To clarify some of these points, a retrospective audit was conducted on a series of patients on whom the diagnosis of "cerebrovascular accident" was made in the Emergency Department. The goals of this study were:

1. To compare the initial diagnosis made in the Emergency Department with the final diagnosis, and, if these were different, to state the reason for this difference.

2. To compare the frequency of various findings in the history and physical examination of patients with the final diagnosis of either cerebral infarct or cerebral haemorrhage to determine whether it was possible to isolate items of particular value in distinguishing these two clinical entities.

3. To determine which tests are useful in the evaluation of patients with cerebrovascular accidents, and to suggest a protocol for the investigation of such patients in the Emergency Department.

Materials and Methods

A retrospective audit was performed on the charts of 90 patients diagnosed, in the Emergency Department, as having suffered from a cerebrovascular accident, over a four-month period from June 1, 1980 to September 30, 1980. The Emergeny Department staff was not aware that this review was being conducted.

All patients were included where the suspected diagnosis was cerebral infarction secondary to thrombosis, arteritis, spasm, hypotension, or blood abnormalities, such as anaemia or polycythemia. Also included were patients suspected of having had a cerebral bleed, either epidural, subdural, subarachnoid, or into a pathological structure, such as a tumor or an A-V fistula. * Patients were excluded from the study if there was a history of trauma.

The study was conducted at a downtown, acute care, teaching hospital, serving a mainly white population, over 16 years of age, with varying socioeconomic backgrounds.

The Emergency Department charts were reviewed, and a decision made regarding which diagnostic category most accurately reflected the diagnosis. If the diagnosis appearing on the chart was vague, i.e. "CVA", that case was placed in the category "Cerebral infarct — type unknown".

The correlation between the Emergency Department diagnosis and the final diagnosis was tested. The Emergency Department diagnosis was based on clinical examination by a resident in Emergency Medicine, Internal Medicine, or Neurology, or a staff physician, residency trained in either Emergency Medicine or Internal

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Table 1A Comparison of Emergency Department Diagnosis to Final Diagnosis *(Final Diagnosis)*

	Cerebral Hemorrhage	SAH	Cerebral Infarct Thrombotic	Cerebral Infarct Type unknown	Cerebral Infarct Embolic	RIND	TIA	No dx	Other
Cerebral Hemorrhage	4								
SAH		11						1	1
Cerebral Infarct Thrombotic			19						1
Cerebral Infarct Type unknown	3			8	1	1	2	4	2
Cerebral Infarct Embolic	1		1		6				1
RIND									
TIA			2	2		2	11	2	2
No dx									
Other									2

Medicine. The final diagnosis was based on either autopsy, CT scan, or full evaluation by a neurologist and follow-up of three months to 1 year.

If the final diagnosis was that of either cerebral infarction or cerebral haemorrhage, the history and physical findings were reviewed with respect to various parametres to determine whether there were any significant differences.

Diagnostic tests were examined with regards to number of times done, frequency of times abnormal, and times useful in diagnosis.

Results

The Emergency Department diagnosis and the final diagnosis were classified into nine categories: intracerebral haemorrhage, subarachnoid haemorrhage, cerebral infarct-thrombotic, cerebral infarct-embolic, cerebral infarct- type unknown, reversible ischaemic neurological deficit**, transient ischaemic attack***, no diagnosis, and other. The correlation between the Emergency Department diagnosis and the final diagnosis is shown in Tables 1A and 1B.

The cases in which there was a lack of correlation, and the factor responsible for the determination of the final diagnosis are presented in Table 2. It is of interest to note that the one diagnosis most frequently missed in the Emergency Department was that of cerebral haemorrhage. Of the 8 patients suffering from haemorrhage, 50% of them were initially felt to have a cerebral infarct. In all four cases, it was the CT scan which allowed the correct diagnosis to be made.

In Table 3 the frequency of various clinical features in patients with the final diagnosis of cerebral haemorrhage or cerebral thrombosis was compared to see if it was possible to isolate symptoms or signs of particular use in distinguishing these two entities clinically. The symptoms which had a discretionary value in the two conditions were vomiting, level of consciousness, abnormal pupillary light reflex, neck stiffness, and the occurrence of previous TIA's. This agrees with previously published studies.

The WHO score was applied[2] to 8 cases of cerebral haemorrhage and 10 cases of cerebral infarct proven by autopsy or CT scan. The score indicated the correct diagnosis of cerebral thrombosis in all cases, but in the cases of cerebral haemorrhage, the score only indicated the correct diagnosis in 25% of the cases.

The frequency of utilization of diagnostic tests is shown in Table 4. Most patients had a CBC, electrolytes, BUN creatnine and EKG. In one case a

Table 1B Comparison of Emergency Diagnosis to Final Diagnosis

Complete agreement	65%
Change in diagnosis related to time course of symptoms*	10%
No definite final diagnosis	8%
Final diagnosis in disagreement with Emergency Department diagnosis	17%

*(eg TIA → RIND or completed stroke → TIA)

*This includes categories 430-438 of the ICD-8 International Classification of Disease

** RIND Reversible Ischaemic Neurological Deficit
An episode of neurological dysfunction due to cerebral ischaemia resolving in greater than 24 hours but less than 28 days.

***TIA Transient Ischaemic Attack
An episode of neurological dysfunction due to cerebral ischaemia resolving completely in less than 24 hours.

Table 2 Changes in Diagnosis

Case Number	E.D. Diagnosis	Final Diagnosis	Reason for Change
1	Infarct type unknown	Cerebral hemorrhage	CT Scan
2	Complicated migraine with infarct	Cerebral hemorrhage	CT Scan
3	Infarct type unknown	Infarct-Embolic	ECHO prolapsing mitral valve
4	Infarct type unknown	Thalamic hemorrhage	CT Scan
5	TIA 2nd to BCP	Migraine	Detailed investigation
6	Infarct-Embolic	Infarct-thrombolic 2nd to lupus anti-coagulant	
7	Infarct-embolic	Cerebral hemorrhage	CT Scan
8	Ophthalmic artery embolus	Chronic retinal arterial disease	Ophthalmic assessment
9	SAH	Benign aseptic meningitis	L.P.
10	Vertobrobasilar TIA	Vertigo NYD	Detailed investigation
11	Infarct-thrombotic	Syncopal attack	Detailed investigation
12	MCA Aneurysm	Acute glaucoma	Neurosurgery assessment
13	Vertebrobasilar TIA	Acute vertigo NYD	Detailed investigation
14	Infarct-type unknown	Metastasis	Brain Scan
15	Vertebrobasilar Ischemia	Hysterical conversion symptoms	Neuro and Psych-assessment

Table 3 Occurance of Various Parameters

	Cerebral Hemorrhage	Cerebral Infarct (Proven by CT Scan)	X^2 Test
Number of patients	8	10	
Sex	M/F 1/1	M/F 7/3	
Age	Average 50	Average 58.3	
BP onset (elevated) stroke	57%	67%	
Vomiting	50%	0%	P<0.01
Consciousness level (decreased)	87.5%	30%	P<0.01
Conjugated eye deviation (abnormal)	12.5%	0%	
Anisocaria	0%	0%	
Papillary (sluggish) light reflex	37.5%	0%	P<0.05
Speech disorder (present)	20%	50%	
Neck stiffness (present)	25%	0%	P<0.01
Moto-deficit (present)	87.5%	90%	
Sensory deficit (present)	67%	40%	
Headache – present	50%	50%	
– lateralizing	–	20%	
Previous or stroke TIA	0%	40%	P<0.05
Bruits	0%	10%	
Tentorial Herniation	25%	0%	
Risk Factors	67%	60%	
WHO score, correct in %	25%	100%	

Table 4 Diagnostic Tests Frequency of Utilization

Investigation	Number Times Done	
CBC	81	90%
LYTES	75	83%
GLUCOSE	72	80%
BUN	56	62%
ABG's	6	7%
EKG	59	65%
OPHTHALMODYNAMOMETRY	7	8%
DOPPLER CAROTID	5	6%
URINALYSIS	16	18%
LDH OR CPK	2	2%
PT PTT	6	7%
ANGIOGRAM	1	1%
EMG	2	2%
ANA	1	1%
RF FACTOR	1	1%

Table 5 Diagnostic Tests — Usefulness in Diagnosis

Investigation	Frequency	Normal	Abnormal	Abnormal and Useful in Making Diagnosis
CT Scan	45	12	33	29
Skull X-Ray	32	30	2	0
Chest X-Ray	40	23	17	0
EEG	20	11	9	0
L.P.	16	5	11	10

Table 6 Correlation Between Tests

Case # CT scan	Brain scan	L.P.	Angiogram
1 Intracranial hemorrhage			A-V mal-formation
2 Infarct-internal capsule			N
3 N	Multiple areas decreased perfusion	Otherwise N	N
4 N	Decreased perfusion		Narrow L carotid
5 No evidence SAH		Bloody	
6 Suggestive of neoplasm			Suggestive of infarct

patient was found to have a hematocrit of 20% as a contributing cause of deceased cerebral oxygenation and in one instance a hypercoagulable state was found.

In Table 5 five of these diagnostic tests were analysed as to the number of times they were normal, abnormal, and, if abnormal whether they were useful in making the diagnosis. Although skull x-rays and EEG's were frequently ordered, they were not useful diagnostically in any situations. Chest x-rays were ordered in 40 patients and often found to be abnormal (coin lesions interstitial oedema atelectasis cardiomegaly). Despite this they did not contribute information which defined the diagnosis.

Table 6 demonstrates 6 cases in which the brain scan, angiogram or lumbar puncture yield complementary information to the CT scan. Angiography and isotope scanning may provide additional information, and, if the CT scan is non-diagnostic it may be necessary to proceed to these other tests. Our study and others[2] have indicated that the CT scan may not detect a subarachnoid haemorrhage, and if this diagnosis is suspected, an LP should be done (Case 5, Table 6).

Discussion

It is crucial for the Emergency Department Physician to have a systemic approach to the "stroke" patient as cerebrovascular disease is common and associated with high morbidity and mortality. It is the third ranking cause of death in the United States, and accounts for 11% of the total mortality[3]. It is not only a disease of the old. Twenty percent of strokes occur in persons under the age of 65[4].

This study was designed to answer three questions of importance to the Emergency Department physician. The first goal was to compare the initial Emergency Department diagnosis to the diagnosis after full work up. In this regard, it was found that the initial clinical diagnosis was incorrect in 17% of the cases, and, in over 25% of these instances the patient had a potentially treatable lesion, e.g. meningitis, hypercoagulable state.

Other studies have attempted to correlate the initial diagnosis of these patients with the final diagnosis. Although the experimental design of these studies is quite different from ours, some general comparisons can be made.

Four cases in this series were initially diagnosed as having suffered an infarct, and later found to have had an intracranial haemorrhage on CT scan. This compares with a study regarding the use of CT scanning in the diagnosis of cerebrovascular disease in which 43% of the patients whose scans showed haemorrhage had been presumed to have sustained a thrombosis on clinical grounds[4]. As the patient who has sustained a haemorrhage should not receive anticoagulants, and may, in some instances, benefit from surgical intervention, discerning between these two conditions is important.

Tumors and subdurals are two conditions which can masquerade as strokes. Although only one metastatic tumor was identified in our study, this contrasts with a paper in which 4 of 30 patients diagnosed initially as cerebrovascular accidents were found to have tumors[5]. In another series of 102 patients diagnosed as subdural hematomas, 25 of the cases had initially been thought to have had strokes[6].

Only one study attempted to correlate the initial diagnosis with the final diagnosis in a relatively non-selected group of patients[7]. Bedside diagnosis was found to be very inaccurate in this paper (only 69% of correct diagnosis). Due to the low utilization of diagnostic

tests (only 18% of their patients had CT scans), and the dependence on the WHO scoring system to determine final diagnosis, the validity of this data is suspect.

The second goal of our study was to compare the frequency of clinical features in patients with the final diagnosis of cerebral infarction or cerebral haemorrhage. The symptoms of vomiting, decreased level of consciousness, abnormalities of the pupillary light reflexes, and neck stiffness were more frequent in patients with haemorrhage, and previous TIA's were more common in patients with infarcts. Although these differences were statistically significant (Table 3), it is not possible to rely solely on these parametres to confirm the diagnosis. Several patients with cerebral haemorrhage had none or only one of the typical symptoms, and the diagnosis was initially overlooked. The WHO scoring system was of no use as a diagnostic aid[1].

The accuracy of the CT scan in detecting subarachnoid haemorrhage in our study was 91%. Other reviews have found that the accuracy was 70-80%[2,8]. As these other studies were done to determine the accuracy of the CT scan, they suffer the disadvantage of only including patients on whom a CT scan was performed, a highly selected population.

The third goal was to evaluate the role of the various laboratory and other diagnostic tests in the investigation of the patient who has suffered from a cerebrovascular accident, and to devise a protocol for the management of such patients in the Emergency Department.

As with most areas of medicine, there is no substitute for a history and physical examination. Particular attention should be directed to any past history of TIA's, and to the presence of vomiting, neck stiffness, changes in the level of consciousness, or alterations in the pupillary reflexes.

Of routine laboratory tests, CBC and coagulation studies were both helpful in determining the etiology of the problem in one case in this series. Despite the fact that routine biochemistry did not reveal any abnormality requiring treatment or contributing to the diagnosis in this series of patients, abnormalities in blood glucose, particularly hypoglycemia, can present in a fashion similar to a CVA. The ECG can also provide useful clues, in particular the presence of atrial fibrillation.

Although the chest x-ray was not helpful diagnostically, much useful information was gained from this test. Skull x-rays and EEG's did not provide any assistance or valuable information.

The single most helpful test for establishing the diagnosis was the CT scan. With cerebral haemorrhage, this will be detected within 1 hour in almost all cases[9,4]. If the CT does not confirm the diagnosis, a lumbar puncture should be done if haemorrhage is suspected.

In the case of infarct, when the initial CT is not diagnostic, some authorities have advocated that it should be repeated in 48 hours, as it may take this long for a cerebral infarct to become evident[4]. If the 48 hour scan is also negative, this correlates with a good prognosis.

In diagnostically difficult cases, brain scan with tomography[10] or angiography may be useful, but this is not generally part of the initial Emergency Department workup.

The protocol would thus include:

- History and physical with special attention to particular parametres,
- CBC, glucose, coagulation screen
- Chest x-ray
- ECG
- CT scan
- LP when indicated due to suspicion of haemorrhage.

Conclusion

It is necessary to investigate patients aggressively in the Emergency Department when they present with the signs and symptoms of a cerebrovascular accident. Treatable lesions can constitute a considerable percentage of such presentations, and one must be suspicious of their presence in order to detect them[5].

Of the tests available to investigate such patients, the CT provides the most valuable diagnostic clues, when combined with a good history and physical examination.

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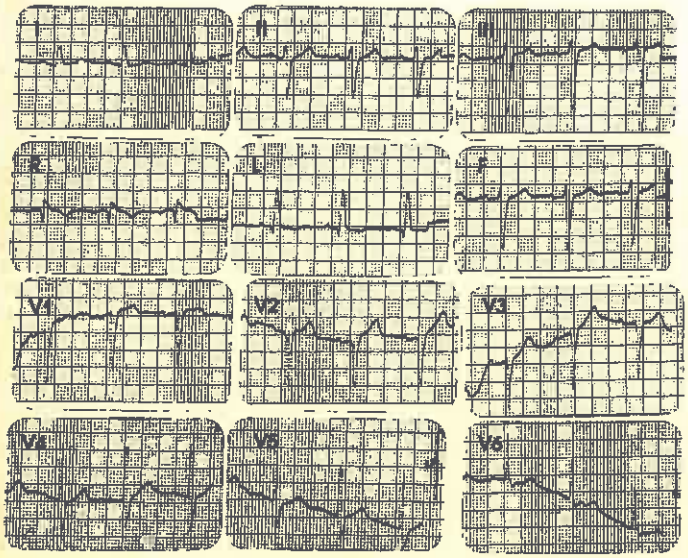
ECG Rounds

By Lynne Fulton, M.D

Case I

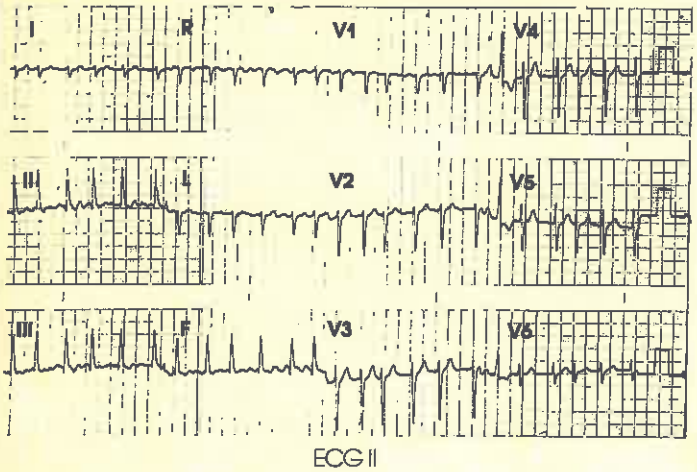
A 65 year old male presented in the Emergency Department with a left sided hemiplegia. An electrocardiogram is done as part of his investigation prior to his referral to a neurology service.



ECG I

Case II

A 67 year old male with a history of severe emphysema presented in the Emergency Department with sudden onset of breathlessness, and a fluttering sensation in his chest.



ECG II

See page 123 for interpretation of results.

ECG Rounds

Interpretation

Case I

rate: 75
rhythm: sinus
P: normal
PR: .12
QRS: .12 sec, incomplete RBBB, left anterior hemiblock
ST: normal
T: normal

Case II

rate: variable, approximately 150
rhythm: irregularly irregular
P: indistinguishable
PR:
QRS: .1-.12 sec, right axis deviation
ST: normal
T: normal

Summary: rapid atrial fibrillation with right axis deviation, occasional PVC.

Discussion

In each of these cases, the axis determination is of significance. Hemiblocks, which can be of great importance in the presence of other bundle branch blocks, are diagnosed by the following criteria:

Left Anterior Hemiblock (most common)

1. Left axis deviation, $> -30°$
2. QRS normal duration, or within .02 sec of normal
3. Small R followed by large S in II, III, aVF, and small q in I and aVL.

Left Posterior Hemiblock (less common, as larger and better perfused)

1. Right axis deviation
2. rS in I and aVL
3. small q (followed by a large R wave) in II, III, and aVF

Of the various means of determining axis, one of the simplest and most accurate is through the mean cardiac vector.

Vectors are mathematical representations of force, in this situation the mean electrical force of the QRS complex. As a force, it has magnitude and direction, and is represented by an arrow (→), the length of the arrow indicating the magnitude of the force, and the point indicating the direction of the net potential.

The potentials for the frontal plane leads can be placed in a hexaxial reference system.

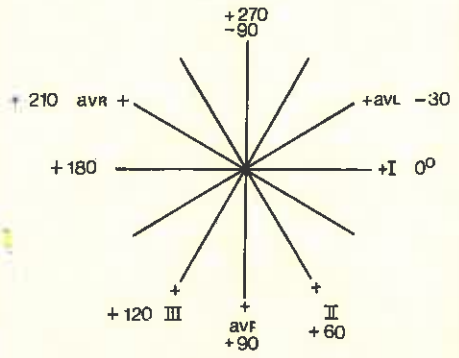


Figure I

By convention, the positive pole of lead I is 0 degrees. The other leads are assigned values relative to this. If a perpendicular is drawn through the centre of any of the lead's axis, an electrical force (vector) on the positive half of the field will record a positive deflection in that lead on the ECG; any force in the negative half, will record a negative, or downward deflection.

The mean QRS vector in the frontal plane can be approximated by means of this reference system, using the standard leads. The net amplitude and direction of the QRS complex in any 2 of

Figure II

the standard leads are plotted along the axis of these leads. Perpendiculars are drawn at these locations, and the point where they intersect represents the mean QRS vector. The angle of this vector is the frontal plane axis.

Example:

Using ECG 1 from the above cases, and using leads I and II, we can determine:

In lead I — R wave = +5
S wave = 0

therefore, we plot this as +5 on the lead I axis.

In lead II — R wave = +3
S wave = −4

therefore we plot this as −1 on the lead II axis.

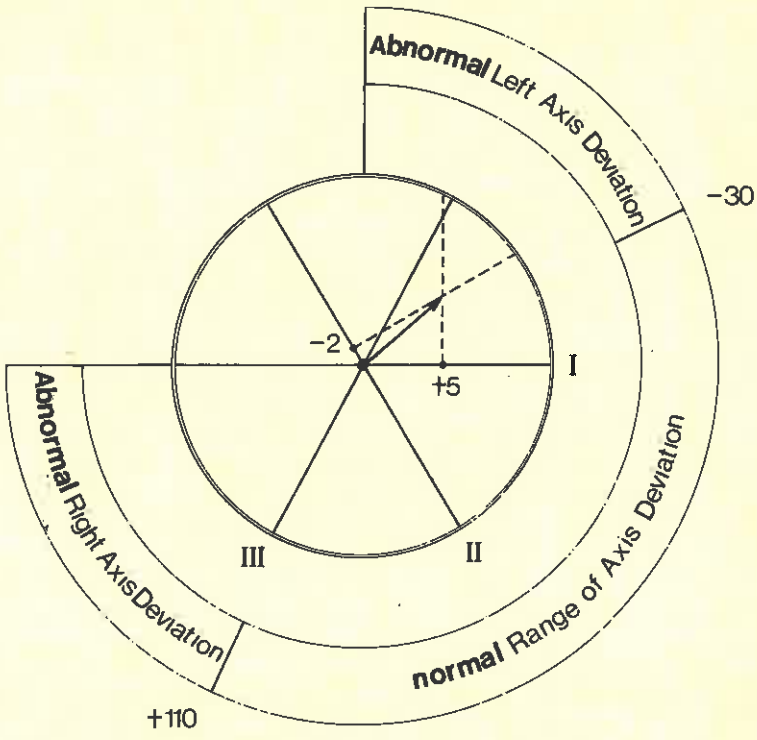


Figure III

By dropping perpendiculars, and determining the point of intersection, the axis is found, in this case, −40°.

See page 119 for ECGs and Case Histories.

Case Conference

Phencyclidine Intoxication

Introduction:

Phencyclidine (P.C.P.), commonly called Angel Dust or a variety of synonyms, is a commonly abused street drug whose popularity is increasing. Recognition of the clinical syndrome of intoxication by emergency staff will ensure prompt diagnosis and treatment.

Case History:

A 20 year old male was being treated at home for a non-specific viral illness diagnosed by his family physician and treated with tetracycline and a phenobarbital/codeine analgesic. He seemed to be managing well but on the third day following diagnosis he was noted to be extremely lethargic, and was later found on the kitchen floor seizing and surrounded by vomitus. He was taken immediately by his family to the closest hospital and admitted to an intensive care unit in status epilepticus. He received a total of 30 mg. of diazepam I.V. over the first one-half hour, and subsequently, 200 mg. of phenytoin and 200 ml. of 20% mannitol I.V. prior to transfer to this hospital for further investigation and treatment. The tentative diagnosis was encephalitis.

On arrival in the Emergency department, the history was as noted and no additional information was obtained.

Physical examination revealed a combative young man with half-opened eyes and flailing limbs. Respirations were spontaneous with good cough reflex, B.P. 120/80 mm.Hg., H.R. 104 and regular, and temperature 38°C. rectally. Examination of head and neck, chest, cardiovascular system, and abdomen was normal. CNS exam showed a restless patient with no spontaneous verbalization. Pupils were equal and reactive to light. Nystagmus in all directions of gaze was noted. There was no facial asymmetry. He moved all limbs equally with normal power and tone. Deep tendon reflexes were slightly decreased symmetrically and plantar reflexes were equivocal.

He was restrained and a C.T. brain scan was done, showing no focal lesion nor evidence of intracerebral edema. A lumbar puncture was also negative. The urine was strongly positive for myoglobin. Other laboratory data showed Hg. 15.3 gm; W.B.C. 26,000; BUN 15; GLUC 171; and normal electrolytes.

The patient was admitted not yet diagnosed to the intensive care unit. It was here that an astute resident in anaesthesia, being familiar with the side effects of anaesthetics used in dog labs, noted this patient to have many features compatible with phencyclidine intoxication. Blood and urine samples were subsequently submitted for drug analyses and were found to be strongly positive for P.C.P. The patient was given supportive treatment and made an uneventful recovery.

Discussion:

(Dr. Chepesuik)

The clinical presentation of this patient was fairly typical of a higher dosage P.C.P. intoxication and underlines the fact that although abuse of this drug is widespread, its manifestations often are not recognized.

In 1957, phencyclidine was first synthesized and called 'Sernyl.' It was touted as the "perfect" anaesthetic — highly potent with no respiratory depressant effect — but its medical use ended in 1965 due to unpredictable post-anaesthetic reactions (primarily psychosis). It was re-introduced in 1967 as a veterinary anaesthetic but all manufacture and sale stopped in 1978.

After being abandoned by the medical profession in 1965, it was adopted by the drug culture as the drug of choice and has achieved widespread use under various names (Table I). There are several reasons for its popularity — it is cheap and easily synthesized in home laboratories; there is a high profit margin; and it can be used to "spice-up" low-grade marijuana and to satisfy the desire for bizarre experiences and altered states.

The Drug Abuse Warning Network (D.A.W.N.), a national drug abuse information collection system that monitors drug abuse trends in the United States, reports that the overall use of P.C.P. has increased and appeared to reach a plateau in 1979.[1] P.C.P. is ranked as the third most common chemical of abuse, after diazepam and heroin and ahead of marijuana.[1] The typical abuser is white, male, and between 10-29 years of age. P.C.P. has been incriminated in more violent crimes and fatalities than any other psychoactive chemical. It has a high addictive potential.

The pharmacological actions of P.C.P. are not well understood, however it is known to be very lipid soluble, is absorbed rapidly by all routes, and is distributed to C.S.F. and adipose tissue. It is metabolized in the liver and excreted in the urine. P.C.P. has dopaminergic, adrenergic, and possibly anticholinergic effects, and is available in liquid, powder, crystral, and solid forms. A synthesis by-product called ΛP.C.C. (piperidinocyclohexane carbonitrile) may contaminate P.C.P. and has been implicated in causing various side effects in abusers such as G.I. upset and vomiting, respiratory arrest, and psychological disturbances.[1] In addition, ΛP.H.P. (phencyclohexyl pyrrolidine), an analogue of P.C.P., has gained popularity due to relatively easy synthesis. Its effects are similar to those of P.C.P. but it cannot be detected in the urine by the standard laboratory analysis.[1] Consequently, this may pose a diagnostic dilemma in the patient with classic symptoms but a negative drug screen.[1]

Clinical Presentation:

A magazine quotation typifies the P.C.P. experience — "While P.C.P. was sometimes a good high, one that makes you feel in tune with music, you had to watch those four ugly C's: combat,

Emergency staff physicians
Toronto General Hospital

catatonia, convulsions, and coma." (T. Cahill, Rolling Stone, July 13, 1978.)

The classical clinical picture associated with acute intoxication onsets in approximately 5 min., peaks in 30-60 min., and lasts 6-8 hours. The low overdose patient (<5 mg. dose) presents with an ataxic gait, slurred speech, and a glassy, blank appearance to the eyes. The behaviour unmasked by P.C.P. may be variable — extreme violence or catatonia. Hallucinations if present are primarily auditory and rarely visual, in contrast to the primarily visual hallucinations of the L.S.D. experience. Other features include muscle rigidity, increased deep tendon reflexes, vomiting, abdominal cramps, and salivation. However, the hallmark of P.C.P. intoxication is vertical and horizontal nystagmus occurring in bursts and persisting for up to 4 days.

The moderate to high overdose patient (10-50 mg. of P.C.P.) as well as the chronic abuser usually exhibit features similar to the low overdose intoxication but the patient may be comatose with or without response to painful stimulation. The hallmark here is increased muscle tone with rigidity (one of the rare situations of drug intoxication where this is seen). There are some complications of high P.C.P. intoxication that may need specific intervention. The most common feature is hyperpyrexia (38-39.5°C.) Others include hypertensive crisis resulting from adrenergic stimulation, seizures progressing to status epilepticus with concomitant rhabdomyolysis and resultant renal failure, and cardiovascular and respiratory collapse with pulmonary edema have also been reported rarely. Finally, a prolonged psychosis requiring long-term treatment may occur.

Treatment:

In the low overdose patient the *sine qua non* of management is to protect the patient from himself and avoid excitation or agitation through instrumentation as those patients are highly responsive to external stimuli.[2] Therefore routine use of ipecac or gastric lavage may aggravate the situation and should be avoided if possible.[2,3] Acidification of the urine increases elimination up to 100X, thus cranberry juice or ascorbic acid 0.5-1.5 gm. p.o. along with diazepam 10-30 mg. p.o. would be appropriate initial treatment.[3]

In the moderate to high overdose patient the initial steps of treatment are the same as for the low overdose, however specific therapy may be required depending on complications. Hyperthermic crisis may be prevented by use of cooled towels or sheets. Seizure activity may require use of intravenous diazepam. The urine should be acidified with ascorbic acid 0.5-1.5 gm. in solution I.V. over 5-10 minutes. Furosemide, 40 mg. I.V., can be given to increase renal excretion of P.C.P. up to 2X. Hypertension and tachycardia may be controlled with propranolol in 1.0 mg. increments I.V. at 1-5 min. intervals up to a maximum dose of 10 mg. Suctioning or intubation should be avoided unless absolutely necessary. Use of chlorpromazine for sedation of the P.C.P. intoxicated patient should also be avoided since it may precipitate seizures and anticholinergic crisis.[4]

Summary:

The Emergency physician must maintain a high index of suspicion in diagnosing P.C.P. intoxication, especially in patients who exhibit bizarre or disinhibited behaviour (N.B. the violent patient in the emergency department).

The classic features are horizontal and vertical nystagmus occurring in bursts and in the unconscious patient, increased muscle tone. A urine sample should be sent for drug analysis, initial treatment started, and the patient observed for signs of complications. Instrumentation should be avoided if possible.

Table 1: Synonyms for P.C.P.

Angel Dust	Peace
Animal Tranquilizer	Peace Pill
Buzzing Bee	Peace Weed
Cadillac	Pig Killer
Crystal Joints (C.J.)	Rocket Fuel
Cyclone	Scuffle
Dust	Sheets
Devil's Dust	Snorts
Elephant Tranquilizer	Soma
Goon	Superweed
Hog	Supergrass
Horse	Surfer
Horse Tranquilizer	T
Killer Joints (K.J.)	Tac
Jet Fuel	Tic
Mist	

Question:

How long should these patients be observed in the Emergency department?

Comment:

Once your clinical suspicion has been confirmed by drug analysis of urine (beware mixed overdoses or false negatives with P.H.P. intoxication) and no complications have occurred by one hour post-ingestion (peak effect), the patient with mild clinical symptoms could be safely observed at home. Longterm psychological effects from P.C.P. abuse are not uncommon and appropriate follow-up should be arranged for all these patients.

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Review of Sexual Assault at a Regional Centre

by Len Hargot, M.D

Abstract

This paper introduces the concept of a Regional Centre for the victims of sexual assault, and presents the results of findings of examination of 55 victims of such crimes over an 18 month period. Findings related to the demographics of the victims, their emotional state, and the difficulties encountered in the initial phases of the operation are presented here.
It was found from this experience that the emergency physician is in an excellent position to manage these patients initially.

Résumé

Cet article introduit le concept d'un Centre Régional pour les victimes d'abus sexuels et présente les résultats d'examens chez 55 de ces victimes au cours d'une période de 18 mois. Les constatations reliées aux données démographiques concernant les victimes, à leur état émotionnel et aux difficultés rencontrées au cours de l'établissement du Centre sont présentées ici.
Cette expérience a démontré que le médecin d'urgence se trouvait dans une excellente position pour recevoir ces personnes immédiatement à la suite de l'assaut.

Introduction

Sexual assault is a problem that we, as Emergency Physicians are obliged to deal with. The actual incidence of this crime is difficult to assess, owing to the fact that it is estimated that only 10% of sexual assaults are reported.[1,2] As 350 to 400 of these cases are dealt with in any one year by the Forensic Unit of Ontario,[3] it can be estimated that about 4000 crimes of this nature occur in this province annually.

In the Hamilton-Wentworth region, as elsewhere, the handling of the victims of sexual assault was often dealt with in a haphazard fashion. Patients were taken to the nearest hospital, where delays in treatment were commonly encountered. Physicians, whether emergency physicians, residents, or gynæcologists, were reluctant to become involved for a number of reasons. These included lack of familiarity with the procedures; fear of becoming involved with a prolonged difficult court case, the lenghly nature of the examination, which interfered with the normal operation of the Emergency Department or the Gynæcology service; and the minimal financial reward for both the examination and the time in court. Having already experienced a traumatic encounter, both physical and mental, these delays, and the reluctant attitude of the staff, added to the stress experienced by the victim.

It was felt that something better should be offered to these patients and to this end a group was formed at McMaster University Medical Centre in an attempt to set up a Regional Centre. Representatives of the Crown Attorney's Office, local police Forensic Unit, hospital administration, physicians, nursing personnel, and the Rape Crisis Centre met and after having discussed mutual concerns, an approach and protocol were devised to satisfy the needs identified.

This protocol, which was in operation from March of 1979 to October of 1980, outlined, in a step-by-step fashion, the management of the patient from the time of notification of her impending arrival, until her dismissal from the department. In October of 1980, the Provincial Sexual Assault Kit (Appendix A) came into use. This kit did not differ significantly from the protocol in use.

One of the major difficulties initially expressed by the Emergency Physicians was the provision of continuity of the examination. The Family Practice Unit was approached, and a system established whereby when the Emergency Physician was involved in a sexual assault case, the Family Practice resident would become responsible for the management of the less critical cases in the Department. If a true emergent situation arose, the Emergency Physician would have to leave the sexual assault victim until the urgent case had been dealt with. In this situation all of the samples previously collected would be sealed with the forensic seal, so there would be no question as to the evidence already taken when the examination resumed.

Having dealt with this problem, the Emergency Physicians and the nursing personnel were educated in the use of the devised protocol. A crash cart was set up with all of the forms and materials necessary to the examination including a microscope to be used in the examination for motile sperm.

In March of 1979, McMaster University Medical Centre (MUMC) became the Regional Sexual Assault Centre for the Hamilton Wentworth region.

This paper will review data relating to the sexual assault cases seen following the development of this Regional Centre and discuss some of the additional problems that arose in the initial operation, and how these were dealt with.

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Method

A retrospective review was conducted on the charts of 55 victims of sexual assault seen at the Regional Centre between the months of March 1979 and August 1980. Seasonal occurrence, age distribution of the victims, emotional state of the victims at the time of examination, and details regarding the crime were all examined.

The majority of the patients in this series were in the 13 to 16 year age group, forming 36% of the total. The 13 to 30 age group accounted for a full 82% of the total patients, with 7% being under the age of 10. This pædiatric age group complicates issues as far as the examination is concerned, for it is sometimes extremely difficult to explain the nature of the examination to a young child, and to obtain an accurate history of the assault.

CASES BY MONTH

Figure 1

There did not appear to be any seasonal correlation in occurrences (Figure 1). Although this graph only covers the 18 month study period, having reviewed cases up to and including August of 1981 in another study, this lack of pattern persists. There would appear to be an increase in incidence in September through November of 1979, and in January of 1980. As relatively small numbers are being dealt with, it does not take many cases to make a significant change in the graph, however, on reviewing cases occurring in these months it appeared as if the increases were due to the fact that a number of these crimes were probably perpetrated by the same assailant, as the modus operandi was similar for many of them. The reason for the decline in numbers following January is unknown, as the assailant was not known to have been apprehended.

Figure 2

Age Distribution of Victims

13-16 years	36%
17-21 years	24%
22-30 years	22%
under 10 years	7%
over 30 years	11%

One of the myths around sexual assault is that the victim should arrive hysterical, crying, and totally out of control. That this is a myth has been repeatedly demonstrated, and the "rape trauma syndrome"[4] is well recognized. In this series only 25% of the victims showed some externalization of being upset, the majority presenting in a very controlled fashion. Of the 25% that did show some evidence of loss of control, this often did not manifest itself during the initial part of the examination, but only became apparent when the time came to do the physical and pelvic examinations.

Figure 3

Details of Incident

Location	
Home of victim	38%
Elsewhere	62%
Assailant known	54%
Unknown	46%

Thirty-eight percent of the assaults in this series occurred within the home of the victim, with 25% occurring outdoors (Figure 3).

In 54% of the cases the assailant was "known" to the victim. This group includes, however, casual acquaintances, situations where the victim had met the assailant in a local bar, or at a party. In the remaining 46%, the assailant was totally unknown to the victim – having broken into their home, or assaulted them in a secluded area.

In one quarter of the cases multiple assailants were involved.

Referring to Figure 4, it can be seen that 58% of the assailants reached ejaculation, by history. There were 84% who attempted or were successful with vaginal penetration, 20% who performed cunnilingus, and 13% who attempted anal penetration, with 5% being successful. One case of deviant behaviour occurred, in that the assailant forced the victim to parade in high heeled shoes, while nude.

In 11% of the cases a knife was used to coerce the victim into performing sexual acts.

Figure 4

Sexual Acts

Ejaculation	58%
Vaginal (attempted or successful)	84%
Cunnilingus	20%
Anal attempts	13%

Ninety-three percent of the cases which were seen wished to proceed with full forensic examination at the time of the initial contact with the Emergency Department. There were 7% who requested examination without forensic specimens, and without the intent of pressing charges.

When this latter situation arises, it is explained to the patient that a lot of valuable information and evidence will be lost within the first 24 hours following the crime. If, at a later stage, they should change their mind, the case might be weakened by the lack of evidence. Time is taken to explain to these patients exactly what is involved in the examination, and emphasis is placed on the necessity of collecting specimens as early as possible.

It is also explained to them that if they should proceed with the examination and collection of forensic specimens, that they may later decide to drop the charges. They are cautioned, however, that the Crown may still decide to proceed with the case, as in the situation where an assailant has been apprehended whom the police suspect of having been involved in additional

cases. Although, in this situation, the police would be reluctant not to proceed, the fact that they would be conducting the case with a somewhat hostile witness would make the chance of this situation arising quite remote.

Eleven percent of the patients had sperm identified at the time of the examination, in only one case were the sperm motile. Such a low percentage of positive sperm identification seemed surprising; however, in follow-up with the Forensic Unit, sperm were identified in additional cases. The reason for the false negatives can perhaps be explained by the fact that low power microscopy of unstained specimens was being used in the initial assessment. At the Forensic Unit, the specimens are stained, and oil emersion microscopy is used.

In five cases the "morning after pill" was administered (figure 5). Ovral was used for this purpose, two tablets being given to the patient in the Department, to be followed by two tablets in 12 hours. This has been shown to be a satisfactory means to prevent pregnancy.[6]

Figure 5

Virginal	25%
Morning after pill	5%
Pregnant	1%
Positive GC	3%

One patient was pregnant, proven both by history and a positive pregnancy test. This points out the importance of doing a screening test for pregnancy in these patients, as it is quite possible that the patient might already be pregnant, and unsure of her status. Being aware of the pregnancy at the time of the assault could mean the difference between terminating the pregnancy or not at a later date.

There were three positive GC cultures at the time of the examination. Treatment was not initiated at the time of the assault, but only after positive smears or blood tests were obtained. If uncertainty exists as to the reliability of the patients regarding follow-up, then venereal disease treatment should be instituted at the time of the examination, according to standard guidelines.[7]

The fear of pregnancy and veneral disease add to the complexity of dealing with a victim of sexual assault. The intial trauma, both physical and emotional, is compounded by these very real fears, and it is important not to neglect these factors.

Only 4 patients in this series did not have family doctors to rely on for follow-up. Despite this small number, this created concern, as no follow-up is done by the emergency staff. To assure that there would be adequate care, physicians in the community were approached. Three female physicians agreed to assume the follow-up care on patients who either did not have a family doctor, or, for personal reasons, preferred not to deal with their family doctor.

These physicians also agreed to be on call for victims of assault therefore providing the patient with the alternative to call a female physician to perform the examination, should the patient prefer this.

Seven cases in the series were referred to pædiatrics and/or the Children's Aid Society. With the young child it was felt to be advisable to get the Pædiatric Team involved at an early stage, including the Child Abuse Team and the Children's Aid Society when appropriate.

Only one case was referred to Gynæcology, and this for the repair of a small vaginal tear.

The amount of physical trauma associated with these assaults was rather minimal. The usual presentation was the finding of little physical evidence of assault, or, if there was evidence, it was in the form of bruising, scratches, or bite marks to the upper extremities, upper trunk, or head and neck.

Regardless as to how little evidence of physical trauma is found, it should be well documented. This includes recording the location, size, and colour of any lesions. If evidence of trauma is found on the patient, photographs of the lesions should be taken for incorporation in the chart. The police identification officer will usually photograph exposed areas of the body; however, if there is injury to areas such as the perineum, these should be photographed by the medical photographer.

With the initial protocol, the patients were asked if they wished a worker from the Rape Crisis Centre to come to the Department to assist them. The patients were sometimes reluctant to do this, as oftentimes they would be in the Department in the early morning hours. It was felt to be important to get the Rape Crisis Centre involved at any early stage, so that initial contact with the patient could be made, and the patient could be made aware of the facilities available through this service. At the present time this format has been changed. When information is received that a victim of sexual assault is being brought to the hospital, a volunteer from the Rape Crisis Centre is called in. When the patient can be told that "we have someone here from the Rape Crisis Centre who can assist and support you", they are more likely to ask for this assistance. These volunteers help greatly in providing emotional support, and assurance of follow-up care.

The average time that the patient spends in the Emergency Department was 2.5 hours. This is quite acceptable, and is a marked improvement over situations where the patient is left to wait for inordinately long periods of time, while the decision is being made as to who will perform the examination.

The actual time spent by the physician doing the examination was approximately 58 minutes. The excuse that the examination is too time consuming does not appear to be a viable one.

Discussion

Many studies have looked at the victims of rape, and, on reviewing these definite patterns seem to emerge. The majority of the data comes from large American cities, and yet, compares with the information from this study in most instances.

No pattern of seasonal occurrence appeared in the assaults dealt with in the Hamilton-Wentworth region. Patterns have been seen in some previous studies, but these have been highly variable, some recording an increased incidence of the crime in the summer months,[8,9] while others found the rate to be higher in the winter.[10] As the majority of these studies were of short duration (12 to 18 months), and there was no consistency in the findings, it would appear that no general pattern exists. Those who have examined assaults and related them to the time of day when they are most likely to occur have seen a distinct increase in the frequency in the late evening and early morning hours.[8,9]

Sexual assaults are made on women of all ages. A five year study done in one Washington hospital found that the victims ranged in age from 15 months to

82 years.[11] Most frequently, however, the victim is in her teens or early 20s. Sixty percent of the victims in this study fall into this category, and this correlates well with the other statistics.[9,10,12] Sexual assaults on children, generally defined as under the age of 12, constitute 6-18% of total cases,[10,12] again matching our data.

The controlled presentation of the majority of the victims of assaults is an important factor to understand. When the victim is not hysterical, one should not assume that the story is unfounded. It is important to realize that the patient is demonstrating blocking mechanisms: trying to deny what has happened, and attempting to regain some element of self control. Unfortunately, this attitude has often been interpreted by police, physicians, and nursing staff in a negative manner, and the victim has been labelled as presenting with an unfounded story. The victim who presents as calm, cool, and collected is in the majority, and it should not be assumed otherwise.

The home of the victim is the most frequent place that a rape occurs, with an outdoor location being secondary in frequency.[9,10,12,13] In this study, one major exception to a general pattern occurred, in that the majority of the crimes were committed by known assailants. While known assailants are the vast majority in sexual assaults on children, reaching 94% in one study,[10] this is not generally the case in attacks on adults, where unknown persons predominate (53-73% of cases).[10,12,13] The inclusion of casual acquaintances in the "known" category may account for some of this discrepancy, but this finding is still unusual.

Multiple assailants are another area where the paediatric age group is in direct contrast to the adult victim. Whereas less than 10% of children have multiple assailants[14] involved in sexual assaults, this increases dramatically in the adult, reaching 50%[15] in one study, the average being around 30% of cases.

Vaginal penetration was attempted in 84% of the cases in this study, which corresponds with other studies which have looked at the types of acts performed.[8,10] The percentage of assailants threatening the victim with a weapon in the American studies tended to be greater, ranging from a low of 11.9% in an Oklahoma study,[8] to a high of 50% in Boston.[16] Force or threat of force approached 100% in two large studies,[9,16] and interestingly, was used in fully 60% of a large series of child assaults[14] despite the fact that in the same study 75% of the assailants were known to the child. This certainly adds validity to the statement that rape is a crime of violence, not one of passion.

The method used in this study to collect a specimen for examination for sperm and acid phosphatase was the irrigation of the vaginal vault with 10 ml or less of sterile water, or saline. One study found that specimens obtained by this method were inadequate for acid phosphatase evaluation because of the dilutional factor, and that yields increased when no irrigation was performed, and the vault was merely aspirated.[17] Although motile sperm can be present within the vagina for a period of up to 72 hours after coitus, the average is 8 hours.[18] Immobile sperm can be present for up to 9 days.[19] Higher yields of positive findings result with an early examination, however, forensic data may still be present in the patient presenting 24 hours or longer after an assault.

Although the time spent in performing the examination is shortened by the use of a standard protocol, it was still found to be close to an hour on average. Another study using a similar protocol found that times ranged from 32 to 90 minutes, with a mean of 53 minutes.[17] Interruptions prolonged their times on some occasions, and the time for the examination fell as persons became familiar with the protocol. Owing to the extensive number of procedures required for a forensic examination of this nature it remains a fairly long procedure, necessitating that some form of alternate coverage be provided for the Emergency Department. An organized approach to the collection of evidence (e.g. sexual assault "kit" is recommended (see Appendix A, and ref. 20)

Conclusion

McMaster University Medical Centre has been operating the Regional Sexual Assault Centre since March of 1979. By establishing such a centre, and using a team approach to deal with the victim of sexual assault, the staff can quickly and efficiently deal with these patients in a humane and understanding manner.

The physician and nursing staff become educated in dealing with this type of patient, and can ensure that the patient's needs from both an emotional and physical aspect will be met. Awareness of the denial mechanisms operating in the majority of cases eliminates the assumption of an unfounded story if the patient presents in a collected fashion. The patient can be encouraged to verbalize and express her feelings as much as possible.

Involvement of the Family Practice residents, female community physicians, and the Rape Crisis Centre further serve to guarantee that the patient will be dealt with promptly and with follow-up guaranteed.[21]

Familiarity with the protocol, much simplified since the inception of the Provincial Sexual Assault Kit, ensures the proper collection of forensic evidence. This facilitates the process for the patient, the practitioner, and for the prosecutor, should the case go before the courts. Hopefully, it will reduce the need for the physician to appear in court in the future. It has been shown that the time constraints, while significant, are not onerous, and that the Emergency Physician is in excellent position to manage these patients initially.

Appendix A

Provincial Sexual Assault Kit: Contents

Consent forms for:

exam and treatment
medicolegal investigation
release form for police

History form including:

gynaecological
general medical
history of assault

Diagram for indicating lacerations, bruises, etc., both of the body and perineal region.

Checklist for management with protocols for

lacerations
fractures
psychological
veneral disease
pregnancy prevention
follow-up arrangements

List of documents and distribution of each.

Checklist for sexual assault exam.

Clothing

- Individual bags for items of clothing
- paper to stand on while removing clothing
- bag to enclose all of above

Body evidence

- envelope for foreign material (grass, dirt, etc.)
- swab and test tube for seminal like stains
- comb for scalp hair specimen, container
- envelopes and toothpicks for material under nails
- oral swab and test tube
- envelope for facial tissue for sputum specimen
- blood sample tubes for grouping
- blood tube for alcohol/drug screening
- blood tube for VDRL

Vaginal/Anal

- envelope for any seminal like deposits pubic hair
- comb for pubic hairs and foreign matter in pubic hairs
- envelope for pubic hair specimen
- envelope for foreign material around vagina
- vaginal swabs
- syringe for irrigating and collecting aspirate vagina
- slide for exam for motile sperm — slideholder
- anal swab
- rectal swab
- container for urine specimen

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Meetings to note

7th Annual Course on Emergency Management

Dates:

Thursday, May 5th, 1983
Friday, May 6th, 1983
Saturday, May 7th, 1983

Site:

Holiday Inn (Downtown)
89 Chestnut St. (behind City Hall)
Toronto, Ont.

Sponsor:

Toronto Western Hospital,
Emergency Associates

Contact:

Dr. Calvin Gutkin, Chairman
c/o Mrs. Anne Grant
Secretary Emergency Assoc.
751 Dundas St. West
Toronto M6J 1T9
Phone 363-8937

Credits:

Hour for Hour credits (18 hrs) applied for as in past years to the College of Family Physicians Canada and the Canadian Association of Emergency Physicians.

Techniques for the resuscitation of the trauma patient

Sponsored by the Programme in Continuing Medical Education and Emergency Medicine Department, Faculty of Health Sciences, McMaster University.

Dates:

Monday, November 15th, 1982; Monday, February 7th, 1983, Monday, June 6th, 1983 (numbers limited to 8 at each program)

Location:

Health Sciences Centre, McMaster University, Hamilton, Ontario, Canada

For Further Information Contact: Mrs. Beverly Woods, Registration Clerk, Continuing Medical Education, Room IM6, McMaster University Health Sciences Centre,
Hamilton, Ontario L8S 4J9
(416) 525-9140, Ext. 2219 or 2223.

CME Calendar

1—Lecture series on trauma

Brantford General Hospital
September 2nd-December 9th, every two weeks
Total: 12 hours — Category I credit

2—A day in emergency medicine

University Hospital
London, Ontario
November 12th, 1982
6 hours — Category I Credit

3—Quarterly meeting

New Brunswick Association of Emergency Physicians
August 28th: Pre-hospital care
3 hours — Category I credit

4—Situations de désastre

Chateau de l'aéroport, Mirabelle, Québec
Septembre 17-19
18 heures — Catégorie I de crédit

Meetings to note continued

Advanced trauma life support courses

Sponsored by the Programme in Continuing Medical Education and Emergency Medicine Department, Faculty of Health Sciences, McMaster University

Dates:

Monday and Tuesday, December 6 & 7, 1982; April 1983 (dates to be determined)

Location:

Health Sciences Centre, McMaster University, Hamilton, Ontario, Canada.

For Further Information Contact: Mrs. Beverly Woods, Registration Clerk, Continuing Medical Education, Room IM6, McMaster University Health Sciences Centre,
Hamilton, Ontario L8S 4J9
(416) 525-9140, Ext. 2219 or 2223.

Emergency Medical Training Programmes

Hamilton, Ontario

Hospitals Chedoke-McMaster Hospital, St. Joseph's Hospital, Hamilton Civic Hospitals.

University McMaster.

Programme Director Dr. David Maxwell, McMaster Hospital Emergency Department, 1200 Main Street West, Hamilton, Ontario, L8N 3Z5.

Type of Programme three (3) yr post-M.D., two (2) yrs of which meet the requirements of the Dept. of Family Medicine Programme.

Size up to three residents per year starting in 1982. Currently one resident.

Accreditation structured to be eligible for accreditation by the College of Family Physicians when this is finalized.

Certification structured to be eligible to sit the certification exam of the College of Family Physicians when this is finalized.

Accreditation residents will be eligible to sit the exams of the CFPC.

Certificate none.

Kingston, Ontario

Hospitals Kingston General Hospital, Hotel Dieu Hospital.

University Queen's.

Programme Director Dr. L. E. Dagnone, Emergency Dept., Hotel Dieu Hospital, Kingston, Ontario, K7L 3H6.

Type of Programme 3 yr post-M.D. or 2 yr post internship, broadly based training, research exposure in final year.

Size maximum of four (4) residents per year.

Accreditation none.

Certification none at present.

Montreal, P.Q.

Hospitals Royal Victoria Hospital, Montreal Neurological Institute, Montreal Children's Hospital, Queen Elizabeth Hospital, St. Mary's Hospital, Jacksonville Memorial Hospital.

University McGill.

Programme Director Dr. Wayne Smith, Royal Victoria Hospital, Emergency Dept., 687 Pine Ave., W., Montreal, P.Q. H3A 1A1.

Type of Programme two yr post-internship; broad based training, elective in Jacksonville, Fla.

Size six (6) residents per year.

Accreditation LREC/ABEM (nothing Canadian as yet).

Certificate eligible to write ABEM exams in U.S.A., certifiable from McGill and Royal Victoria Hospital.

Ottawa, Ontario

Hospitals Ottawa General Hospital, Ottawa Civic Hospital, Children's Hospital of Eastern Ontario.

University Ottawa.

Programme Director Dr. A. F. Henry, Chief, Emergency Dept., Ottawa Civic Hospital, Ottawa, Ontario, K1Y 4E9.

Type of Programme three (3) yr post-M.D. programme, two (2) yr of which meet the requirements of the Dept. of Family Medicine Programme.

Size four residents per year.

Accreditation none per se, although it is hoped that residents will be eligible to sit the exams of the CFPC.

Certificate none.

Toronto, Ontario

Hospitals Toronto General, Sunnybrook Medical Centre, Hospital for Sick Children

University of Toronto.

Type of Programme four (4) yr after graduation, three (3) yr after rotating internship.

Certification FRCP(C)

Size 3 residents per year.

Accreditation RCPS(C)

Programme Director Dr. Bruce Rowat, Director of Emergency Department, Toronto General Hospital, Toronto, Ont.

Calgary, Alta.

The University of Calgary offers a four year residency programme in Emergency Medicine, leading to an FRCP, subject to Royal College approval.

The Special Certificate of Competence in Emergency Medicine is offered as a one year programme for graduates of the two year CCFP programme in Canada.

Applicants should apply to Dr. R. Abernethy, Programme Coordinator, Foothills Hospital, 1403 - 29th Street N.W., Calgary, Alberta T2N 2T9.

London, Ontario

Hospitals Victoria Hospital, St. Joseph's Hospital, University Hospital.

University Western Ontario.

Programme Director Dr. K. Ferguson, Director, Dept. Emergency Medicine, Victoria Hospital, 391 South St., London, Ontario, N6A 4G5.

Type of Programme two (2) yr programme after internship, broadly based training with emphasis on internal medicine.

Accreditation accepted by RCPS(C) as two yrs of internal medicine training.

Certification none.

Information for Authors

Guidelines for submission of manuscripts for publication

The CAEP Review invites authors to contribute appropriate manuscripts for publication on topics relevant to the practice of Emergency Medicine and the organization of Emergency Medical Services. Manuscripts and other communications should be addressed to the Editor, CAEP Review, care of Department of Emergency Services, Sunnybrook Medical Centre, 2075 Bayview Avenue, Toronto, Ontario, M4N 3M5. A covering letter should accompany submissions indicating the principal author with whom the negotiations can be undertaken regarding any revisions that are seen to be necessary prior to publication. The letter should also specify whether or not the material has been submitted to any other periodicals for consideration for publication.

Guidelines for the presentation of manuscripts

The CAEP Review adheres to the requirements for manuscripts submitted to biomedical journals as contained in the Declaration of Vancouver of January 25th, 1978.*

Manuscripts should be typed, double spaced including the title page, abstract, text, acknowledgements, references, tables and legends and illustrations. Each component of the manuscript should begin on a new page. Authors should keep copies of everything submitted.

Title Page The title page should include the title of the article which ought to be concise and informative. The title should be amenable to indexing. The title page should also contain the full name, academic degrees, and affiliations of each author. The title page should include the name of any organization sponsoring an assembly or meeting in which the article may have been originally presented. If the research has been supported by grants, such financial support should be acknowledged on the title page. Finally, the title page should also contain the address for reprint requests.

Abstracts All original contributions and review articles should be preceded by an abstract, typed, double-spaced on a second page following the title page. The abstract should be no more than 150 words, stating the purpose of the study, basic procedures involved, principal findings including statistical significance, and principal conclusion drawn. Abbreviations or symbols should be avoided wherever possible. Below the abstract up to 10 key words or short phrases should be provided which will assist indexers in cross-indexing articles.

Text The text of original articles of a basic science or clinical nature should conform to acceptable standards for scientific articles. It should be divided into introduction, methods and materials, results, and discussion section.

Introduction The introduction section should clearly state the purpose of the article and should give only references pertinent to the rationale for undertaking the article. The review of the literature should not be included in the introductory section.

Methods and Materials The methods and materials sections should clearly and thoroughly outline the methodology and materials employed in the undertaking of the study. In particular, the selection of clinical or experimental subjects should be well defined, apparatus used should be specified, and references relating to the selection of materials and methods should be given, such that other investigators can reproduce the methods and evaluate the results. Any new or substantially modified methods should be described fully, giving reasons for their use and evaluating their limitations.

Results The results of experiment should be presented in a logical sequence in the text with tables, illustrations, graphs, etc. to clarify important results or observations.

Discussion The discussion of the findings should relate the observations to other relevant studies. It should emphasize new and important aspects of the study and conclusions. The discussion section should not comprise an exhaustive literature review.

Acknowledgement Persons who have made a substantial contribution to the study, yet who are not listed as authors may be acknowledged.

References References should be listed in the form as adopted by Index Medicus and the National Library of Medicine in United States. All authors should be listed in studies with three or fewer names. Otherwise, the first three names only should be listed. Journal name should be abbreviated again according to the style in the Index Medicus. The title of the article should be included.

Tables Each table should be typed separately on a piece of paper double-spaced. Tables should have a short heading. Explanations should appear in the footnote not in the heading. If data is from other sources, this should be indicated and permission should be obtained and acknowledged. Tables should not be submitted as photographs.

Illustrations Illustrations should be submitted as sharp, glossy, black and white photographs 5 x 7 or 8 x 10 (12.7 x 17.3 cm or 20.3 x 25.4 cm.) Figures should be professionally drawn, lettered and photographed-free-hand or typewritten letters are unacceptable. Lettering should be consistent throughout and sufficient size that when photo reduced will still be legible. Illustration should be accompanied by a brief legend on a separate piece of paper indicating the purpose of the content of the illustrations. Abbreviations should be avoided or explained. Photographs of patients who are recognizable should be accompanied by a consent form.

Preparation of other material

The Review will consider material other than original experimental work. In particular, the Review will from time-to-time publish review articles from experts in the field who have conducted a thorough literature search. Papers submitted of this nature should comprise of extensive literature reviews on a narrow clinical topic, well-referenced, and of significant relevance to the clinical practice of Emergency Medicine.

Emergency case reports will also be accepted for publication. Such papers should comprise a brief factual presentation of an emergency case. Reports accepted for publication will be of cases of unusual problems or innovative therapies. Following the case presentation should be a brief discussion of the diagnosis and treatment and subsequently, a brief review of related literature.

The Review will also consider for publication, guests editorials from time to time. These should represent an authoritative opinion or comment on current problems faced by Canadian Emergency Physicians. They may relate to the educational, clinical research, administrative, political aspects of Emergency Medicine.

Letters to the Editor will be published regularly in the Review. Such letters should be addressed to the Editor and should comprise brief comments on topics recently discussed in the Review or elsewhere. In addition, brief communications of cases or other items of interest will be considered for publication in this section from time to time. In each case, the letter must be clearly signed by the author with a return address, and permission to publish indicated.

Approval to publish

All manuscripts submitted for publication will be reviewed by the Editor or other members of the Editorial Board. If any substantial changes are to be made in the manuscript, a copy will be forwarded to the author prior to publication for approval. Authors are responsible for all statements made in the text including changes suggested by the Editor. No changes will be accepted after final approval by the author has been made.

Deadlines

The CAEP Review is a quarterly publication with press dates the first day of each quarter. Copy deadlines are the 8th of the preceding month. Material to be considered for publication and review by the Editorial Board should be submitted at least sixty days prior to publication to date.

Address all correspondence to:
The Editor, CAEP Review
c/o Dept. of Emergency Services,
Sunnybrook Medical Centre
2075 Bayview Avenue
Toronto, Ontario. M4N 3M5

*These requirements known as the Declaration of Vancouver were agreed upon at that city on January 25th, 1978. Members of the International Steering Committee included J.F. Murray, M.D. (Chairman); E.G. Huth, M.D., S. Lock, M.A.M.B., W.R. Barclay, M.D.; S. Crawford, Ph.D.; R.W. Mayo; H.R. Meiss; I. Munroe, M.D., F.H. Porcher, M.A., A.S. Relman, M.D., D.A.E. Shephard, M.B., T. Southgate, M.D. Enquiries regarding the Declaration should be sent to Dr. E.J. Huth, Annals of Internal Medicine, 4200 Pine Street, Philadelphia, PA 10904 U.S.A.