Attitudes of medical students to necropsy

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Abstract

Aim—To compare the attitudes of students towards the necropsy at different stages of their undergraduate career.

Method—Students in the first, fourth and sixth academic years ($n = 283$) were asked to respond anonymously to a questionnaire comprised of 26 attitude statements. These statements dealt with the importance of the necropsy in medicine, rapport with the bereaved family and emotional reactions to the necropsy.

Results—Of the students, 226 (80%) completed the questionnaire. Overall, the students agreed on the importance of the necropsy. The three groups differed in 10 statements on the approach to the bereaved family and emotional reactions to the necropsy. First year students showed more personal involvement and would have more difficulties in approaching the family of the deceased as well as in attending a necropsy. These reactions were increasingly less noticeable with fourth and sixth year students. The latter group was also more inclined to accept cremation, organ donation and necropsy of their own corpses.

Conclusion—The changes in attitudes towards the necropsy throughout undergraduate study may reflect both the influence of psychological defense mechanisms and the viewing of necropsy as a relevant tool in medical practice. Necropsy should be carefully and sensitively incorporated into programmes designed to teach students about death and dying. This might reduce both their reluctance to seek permission for necropsy and their difficulty in looking after the dying patient.

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Keywords: necropsy; attitude; medical education.

Methods

All first, fourth and sixth year medical students ($n = 99, 99$ and 85 , respectively) at the State University of Campinas, Campinas, Brazil, were asked to respond anonymously to a questionnaire comprised of 26 attitude statements on necropsy. The questions dealt with three main topics: (1) the importance of the necropsy in medicine; (2) rapport with the bereaved family; and (3) emotional reactions to the necropsy. The questionnaire was compiled from statements from previously published papers,¹⁻⁸ as well as comments from a panel of medical students, clinicians and pathologists. Pilot versions of the questionnaire were tested twice with a group of medical students not participating in the main study.

The attitudes were measured using visual analogue scales (VAS)—that is, a 100 mm line representing a continuum of attitudes ranging from “strongly disagree” at one end to “strongly agree” at the other. The VAS were measured in millimetres. Non-parametric statistics (the Kruskal-Wallis and Mann-Whitney tests) were used to evaluate differences among the groups. In order to minimise the occurrence of type II errors resulting from many tests being done simultaneously, we adopted the procedure suggested by Schweder and Spjøtvoll.⁹ The students’ age, sex, religious background, and attendance at necropsies were also recorded.

Results

Two hundred and twenty eight students, corresponding to 75%, 91% and 75% of the first, fourth and sixth year students, respectively, completed the questionnaire (table 1). Most of the students came from middle to upper class families, with 149 (65%) stating that they were religious (74 (32%) catholics; 37 (16%) protestants). There was no significant difference between respondents and non-respondents with regard to sex and age.

Overall, the students agreed on the items relating to the importance of the necropsy and generally rejected the idea that “modern advances in diagnostic techniques have decreased the need for necropsies”. Table 2 shows the overall mean (SD) value for each VAS on which students of the three academic years did not differ.

The responses of the three groups differed significantly ($p < 0.01$) in 10 statements. However, the statistical procedure adopted in this study indicated that only seven of these 10 results should be considered. These items dealt mainly with the approach to the bereaved fam-

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Causes of the decline in necropsy rates have been found in society, in clinical medicine and in the discipline of pathology itself.¹⁻⁴ The attitude of the clinician who cared for the patient and who will (or will not) ask for permission to carry out a necropsy certainly plays a key role in this issue. Among young doctors, the attitude towards necropsy is strongly influenced by the medical curriculum.⁵⁻⁸ The aim of our study was to compare the attitudes of medical students towards necropsy at different stages of their undergraduate career.

Table 1 Demographic details of the medical students participating in the study (n = 228)

	Academic year		
	First (n = 74)	Fourth (n = 90)	Sixth (n = 64)
Age, years (mean)	19.3	21.5	23.8
Sex (%)			
Male	57	53	48
Female	43	47	52
Attended necropsy (%)	7	32	53

ily and with reactions to necropsy. A gradient of responses was observed among the three groups, in that first year students showed more personal involvement than sixth year students, with fourth year students' attitudes being roughly between the two. Thus, a first year student "would rather attend a necropsy of someone he does not know, than the necropsy of a patient of his". In contrast, sixth year students disagreed with this statement (table 3).

Sixth year students who had attended a necropsy were compared with those who had not. A significant difference was found only in

one item, for which those who had not attended a necropsy agreed more strongly with the idea that "a necropsy should be performed only if alternative methods fail to clarify the cause of death" (mean VAS = 74.2; mean VAS for those who attended a necropsy = 52.5; $p = 0.004$).

Significant differences between men and women were observed only in the degree of agreement/disagreement for items 2, 5, 6, 7, and 21. In general, male students were more favourably disposed towards the necropsy than their female counterparts. There was no significant difference in the attitudes of students who were catholic or protestant or who had no religious affiliation.

Table 4 shows the frequency distribution of the responses to the question "Which procedures could be performed on your own corpse?". The answers to this question did not differ between the sexes. As with the attitude scales, there was a gradient of responses among the three academic years, with sixth year

Table 2 Attitude statements on which the responses of the three groups of students did not differ and respective mean scores on the visual analogue scale (n = 228, Kruskal-Wallis test, $p > 0.05$)

Attitude statement	Mean score (SD) *
1 Modern advances in diagnostic techniques have decreased the need for necropsies	32.8 (28.7)
2 I would like to be able to see (have seen) more necropsies during my training	76.1 (29.2)
3 The resources of the pathology department should benefit patients on treatment rather than being used for necropsies	4.4 (28.7)
4 In the present state of knowledge the necropsy is still the best method for elucidating the cause of death	57.7 (31.0)
5 I prefer to look at coloured and histological slides of diseases rather than attend necropsies	29.2 (33.0)
6 If it were possible, I would sign the death certificate in order to avoid the necropsy of a relative of mine	28.9 (31.8)
7 I hope I never have to see a (another) necropsy	21.2 (29.0)
8 The necropsy gives NO emotional consolation to the bereaved family	59.2 (35.2)
9 It is more painful to see a necropsy of a child than of an adult	51.3 (36.2)
10 A necropsy should be performed only if alternative methods fail to determine the cause of death	64.4 (34.3)
11 The smell of the necropsy room is disgusting	55.0 (29.9)
12 Attending a necropsy is a better way of learning than attending a clinicopathological lecture	53.2 (30.0)
13 The family is even more shocked at the sight of the cuts and stitches of the necropsied body	59.8 (31.1)
14 I would be afraid that the body of a relative of mine would not be handled respectfully during the necropsy	53.4 (36.4)
15 The family will feel even more shocked if I ask their permission to perform a necropsy	39.7 (29.1)
16 In order to assess the quality of diagnoses and treatments, necropsies should be routinely and systematically performed in every main hospital	60.3 (34.6)

* Scores can vary from 0 mm (complete disagreement) to 100 mm (total agreement). A value of 50 mm represents a neutral or uncertain view.

Table 3 Statements with significantly different responses among the three groups of students and their respective mean scores on each visual analogue scale (n = 228, Kruskal-Wallis test)

Attitude statement	Mean score (SD) *			
	First year	Fourth year	Sixth year	p value
<i>Rapport with the patient's family</i>				
17 I would insist on a consent to necropsy for a patient of mine whose cause of death was unknown	63.3 (32.4)	75.8 (33.7)	89.5 (20.3)	0.00001
18 I would NOT insist on a consent to necropsy if a patient of mine had died and his family was too shocked	59.7 (34.6)	43.9 (32.8)	37.5 (34.2)	0.0006
19 I feel that I would be prolonging the family's suffering if I were to request a necropsy	48.6 (32.5)	33.8 (29.5)	28.0 (27.4)	0.0005
20 When the doctor is close to the family of the deceased patient, he is not the most appropriate person to ask for a necropsy	56.9 (33.9)	37.0 (35.8)	34.4 (36.6)	0.0001
<i>Emotional reactions to the necropsy</i>				
21 I associate the idea of a necropsy with a body disfigured by incisions and sutures	42.0 (33.9)	31.9 (33.0)	22.9 (31.0)	0.001**
22 The necropsy reveals intimate aspects of a person who had life, feelings and ambitions	43.8 (33.2)	38.4 (38.4)	20.6 (37.3)	0.0002
23 The sight of the body during necropsy is horrifying to me	36.2 (28.2)	36.6 (31.5)	23.9 (26.4)	0.007**
24 Even if it seems strange to scientists, I believe that the dead person may suffer during the necropsy	19.2 (26.6)	13.1 (27.4)	8.9 (16.9)	0.004**
25 I would be afraid that a necropsy could reveal a wrong decision of mine when I was in charge of the patient	36.7 (30.6)	26.6 (34.5)	16.0 (26.9)	0.0001
26 I would rather attend the necropsy of an unknown person than of a patient of mine	57.5 (34.8)	42.1 (35.7)	26.2 (35.5)	0.00001

*Scores can vary from 0 mm (complete disagreement) to 100 mm (total agreement). A value of 50 mm represents a neutral or uncertain view.

**Not considered to refute the null hypothesis (see Methods).

Table 4 The percentage of medical students agreeing with procedures relating to their own corpse. Results are expressed as per cent

Procedure	First year (n = 74)	Fourth year (n = 90)	Sixth year (n = 64)
Burial	78	70	65
Cremation	61	70	84*
Organ donation	79	90	98†
Necropsy	44	72	88‡
Anatomical dissection	11	19	20

χ^2 test for trend: * p = 0.007; † p = 0.0008; ‡ p < 0.000001.

students being more in favour of cremation, organ donation and necropsy.

Discussion

In our medical school, the undergraduate curriculum is divided into pre-clinical and clinical sections (two and four academic years, respectively). Pathology tuition begins in the third academic year and is spread over two terms with a total of 480 hours of lectures and practical classes. The students are encouraged, but not obliged, to attend necropsies. They are most likely to attend necropsies during the final two academic years, during which they are involved in patient care and participate in clinical pathology seminars.

Teaching on death and dying occurs during the third year, in the Medical Psychology course (120 hours). Despite an intake of 100 students per year, this course is based on teaching small groups. Besides giving the students an introduction to the psychological aspects of medical practice, the course aims to help the students to approach the patient correctly and to understand the intricacies of the doctor-patient relationship.

In the present study we assumed that the three academic years surveyed represent distinct moments of a continuum along which every medical student passes, particularly as there has not been any alteration in the teaching of Pathology and Medical Psychology during the past six years. Although the assessment of attitudes is more complex than simple agreement or disagreement with a few statements, the use of visual analogue scales permits easy measurement and have been widely reported in the literature.¹⁰⁻¹² We feel that we were able to evaluate some trends in the development of the students' attitudes towards necropsy during their undergraduate career.

First year students had more difficulties in approaching the bereaved family as well as in

attending a necropsy. These problems tended to diminish among fourth and sixth year students. This change may reflect a progressive decrease in the degree of identification with the patient and his family, as the student proceeds through the medical course. Alternatively, the view of necropsy as a relevant tool in medicine may gain more importance and counteract the students' difficulties in coming to terms with death and dying. In support of our hypothesis, sixth year students were more inclined to accept cremation, organ donation and necropsy of their own corpse.

Our findings demonstrate that the students' attitudes towards necropsy and death change during their training, thus confirming that necropsy should be carefully and sensitively incorporated into programmes designed to teach students about death and dying.⁵ This may reduce the students' reluctance to spend time looking after the dying patient as well as in attending necropsies. As the first venture in this area in a South American country, this study has obtained data that would merit re-examination in different cultures and medical schools.

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Cancer Medicine, 4th edn, 2 volumes. Holland JF, Bast RC Jr, Morton DL, Frei E III, Kufe DW, Weichselbaum RR, eds. (£195.00.) Williams and Wilkins. 1996. ISBN 0 683 04095 2.

Cancer medicine is a very American book with only 12 of the 346 contributors coming from outside the United States, and only one, Professor Bruce Ponder, from the United Kingdom. However, there is little cultural conspiracy and the text is readily accessible. Each section has a contribution from someone who is considered to be the field leader and all of the main institutions are reasonably well represented. The market offers two main competitors: *Cancer: principles and practice of oncology*, commonly known as "DeVita" (JP Lippincott), and *Treatment of cancer* (Chapman and Hall). To some extent the decision as to which to choose is parochial and lies between the Memorial-Sloan-Kettering in New York, the Hammersmith in London, and this volume that inclines towards Harvard in Boston.

Cancer medicine is contemporary and definitive with respect to the essential cancer curriculum. It is helpfully arranged with clinical cancer medicine in mind. The historical context is presented extremely well and the book lends itself as a resource for undergraduate lecturing. It is comprehensive enough for postgraduates and basic scientists alike. The presentation is a little cheap for the price, and lacks a certain authoritative dignity, but this is deceptive. Weighing more than 7 kg this tome is 45% heavier than the field leaders. If surgeons were still using the family bible for ganglions, then this would be a match for any cancer.

R PENSON

Oral Pathology—Actual Diagnostic and Prognostic Aspects. Seifert G, ed. (Pp 244 hardback; DM 248.00; sFr 216.00.) Springer. 1996. ISBN 3 540 60987 3.

This is a splendid book—it is well written, clear and concise, providing an excellent overview of recent advances in the field of oral pathology. The scope of the book is such that it will be of benefit to anyone with an interest in diseases of the oral mucosa or oral cancer.

The first chapter discusses the epidemiology, clinical manifestations, pathogenesis, histopathological features, and treatment of both common and rare mucocutaneous conditions affecting the mouth. This section contains an excellent review of recent developments in our understanding of the antigens associated with autoimmune diseases, and the mechanisms likely to be responsible for cell damage. This is followed by two chapters summarising viral infections with manifestations involving the oral mucosa or salivary glands. Both benign and malignant disease are included and the text is enhanced by the inclusion of excellent tables. This is followed by a summary of the oral pathology of AIDS, including a comprehensive description of the four common subtypes of orofacial Kaposi's sarcoma. The fourth chapter reviews the new concept of extranodal non-Hodgkin's lymphomas of the oral cavity, emphasising the importance of subtle histological features, together with the results of immunological and molecular studies. The book is well illustrated throughout with clinical photographs and photomicrographs.

The final chapters discuss new developments in our understanding of the carcinogenic process which occurs in the oral cavity

and includes an excellent summary of recent studies looking at the possible clinical applications of proliferation markers in the diagnosis and prognosis of oral lesions. The role of oncogenes and the search for the tumour suppressor likely to be involved in the pathogenesis of oral cancer add to the wealth of new information succinctly presented. All chapters are well referenced, perhaps too well in some instances. The chapter discussing new aspects of viral disease has nearly 600 references and it would be difficult for the inexperienced reader to highlight key references. However, overall this book provides a very helpful summary of a plethora of recent information and can be strongly recommended.

M PARTRIDGE

Notices

Workshop on diagnostic pathology Dysplasia in inflammatory bowel disease

Wednesday, May 7 1997
St Mark's Northwick Park Hospitals,
Harrow

A day of practical interactive microscopy and lectures on the clinical relevance of dysplasia, diagnostic problems, and controversies. This is an intensive course for consultants and senior trainees. Using a multiheaded microscope, problem cases will be demonstrated and discussed. Faculty: Professor G T Williams, Dr A B Price, Professor I C Talbot.

Numbers are limited to 11 but if there is sufficient demand, the course may be repeated. Cost is £95.00 including coffee, lunch, and tea.

For further information and reservations, contact Mrs Elena Power, St Mark's Academic Institute, Northwick Park, Watford Road, Harrow HA1 3UJ. (tel: 0181 235 4048; fax: 0181 235 4039.)

Forthcoming meetings of the South Thames West Regional Cytology Training Centre

June 26–27 1997 Two day South Thames Breast Cytology Course

October 6–31 1997 Four week introductory gynae course for MLSOs/cytoscreeners

November 17–21 1997 One week gynae update course for MLSOs

December 1, 2, and 4 1997 One day non-gynae courses for MLSOs

Further details can be obtained from Mrs Jennifer Walker, Department of Cytology, Royal Surrey County Hospital, Egerton Road, Guildford, Surrey GU2 5XX. (Tel: 01483 571122 ext 4374; fax: 01483 453615.)

Non-gynaecological and fine needles aspiration cytology course Oxford Cytology Training School John Radcliffe Hospital

June 2–6 1997

This one week course is suitable for all trainee and career medical staff and clinical scientists. It is recognised for CME purposes. Some accommodation is available. Course fee: £250. The FNA cytology component may be attended separately on June 5–6; fee £100.

Course organiser: Dr ID Buley, Consultant Pathologists, Histopathology and Cytology, John Radcliffe Hospital, Oxford OX3 9DU.

Further details from Patsy King, tel: 01865 220510.

Preparation, restoration, and maintenance of pathological museum teaching specimens

Many departments cannot justify having a dedicated technician to prepare interesting museum specimens for teaching. The Department of Pathology, University Hospital Queen's Medical Centre in Nottingham has a team of highly qualified and experienced staff in its museum workshop who can prepare and mount new material or restore existing specimens. All specimens are mounted in tailor made "perspex" containers manufactured to the highest standards. The mounting fluid complies with COSHH regulations.

For details on this service, contact Mr JE Ben, Museum Curator, Pathology Museum, University Hospital, Queen's Medical Centre, Nottingham NG7 2UH. (Tel: 0115 970 9076; fax: 0115 970 4852.)

Corrections

The beginning of paragraph 6 in the editorial by Hunt and Segal (*J Clin Path* 1996;49:958) should have read:

Measurement of fibrinolytic activity is difficult. Low fibrinogen levels will eventually result due to consumption. Also there may be prolongation of clotting due to interference from elevated fibrin degradation products. Increased levels of . . .

and not as published.

Attitudes of medical students to necropsy. N J Botega, E Marques, A Cruvinel, Z V Moraes, L A R Costa. *J Clin Pathol* 1997;50:64–66.

L Augusta was cited as an author of this paper in error.