Short Report

Improving care in ovarian cancer: The role of a clinico-pathological meeting

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ABSTRACT

Background. We assessed the impact of clinico-pathological meetings on the diagnosis and management of patients with ovarian cancer.

Methods. Between January 2005 and December 2006, about 400 patients of suspected or confirmed ovarian cancer were evaluated in the 'Gynaecology Tumour Clinic'. Of these, 108 cases were referred for discussion in the weekly clinico-pathology meeting for various indications. These cases were retrospectively analysed regarding their initial clinical and pathological diagnosis, the indication for referring the case for discussion in the meeting and the impact this had on the overall management. Alterations in diagnosis, which impacted management, were classified as 'major changes' and those, which did not, were called 'minor changes'.

Results. Ninety-one of the 108 cases discussed were available for analysis; 75.8% of cases were initially diagnosed as epithelial ovarian cancers. In 48 of 91 cases (52%), there was an alteration in the diagnosis as a direct result of discussion in the meeting, mainly after clarifications regarding histological grading in 34 cases. Of the remaining 14 cases, 3 had a change in histopathological diagnosis; 2 cases, which were initially labelled as undifferentiated tumours, had their diagnosis clarified; and in the remaining 9 cases, in which the primary site was not known, a possible primary site could be assigned (with the help of clinical, radiological and pathological inputs). Among the 14 cases with alterations other than grading, the change was contributed by slide review alone in 7 cases and in the rest by a combination of slide review and clinical inputs. As a direct outcome of the meeting, 20 of 91 cases (22%) had their management plan modified (major change).

Conclusion. The practice of conducting weekly clinico-pathological meetings has a major impact on the management of cases of ovarian cancer.

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INTRODUCTION

A clinico-pathological meeting is an interdisciplinary forum for discussing the diagnostic and therapeutic aspects of a patient's care. This is a well accepted mode of multidisciplinary care of patients.[1,2] In addition to facilitating accurate diagnosis and staging in a given case, these meetings help in the training of residents. Such meetings improve diagnostic accuracy by (i) clarifying clinical details of a given case (which may not have been available earlier to the pathologist) and (ii) ensuring an independent review of the pathology slides by another person. Both these measures have been shown to improve diagnostic accuracy and patient care in earlier studies.[3–6] Ovarian cancer is characterized by heterogeneity in its clinical presentation and overlap between the presentation of various tumour types. Moreover, the management decisions depend upon a precise histopathological diagnosis. Would a clinico-pathology meet help in managing such patients?

Clinico-pathological meetings are held every week at our institution where cases can be scheduled at the behest of either the pathologist or the clinician. The criteria for scheduling a case for discussion are: (i) mismatch between the clinical impression and histopathology, (ii) unusual/interesting cases, and (iii) inadequate pathological or clinical information for deciding the management or prognosis of a particular case. The meetings last for an hour and are attended by consultants and residents from the departments of pathology and medical oncology. The details of the meeting and the outcomes are recorded in patients' files. We reviewed the cases of ovarian cancer that were discussed in these meetings with the aim to ascertain the impact of these meetings on the diagnosis and management of such patients over a 2-year period.

METHODS

Between January 2005 and December 2006, about 400 cases of ovarian cancer were seen at our centre of which 108 were discussed in the weekly clinico-pathological meetings. The details of the cases, discussions and outcome of the meeting with regard to each case were obtained from the case records. Inadequate data was clarified (wherever possible) by contacting the concerned clinician or pathologist involved in the discussion. Cases where all the necessary details could not be collected were excluded. The following information was collected for each case: (i) the initial clinical impression, (ii) the initial histological diagnosis, (iii) the reason for discussing the case in the weekly clinico-pathological meeting, (iv) the final diagnosis after the meeting, and (v) alterations in the management (if any) as a result of the meeting. The alterations in diagnosis, which influenced management decisions, were classified as major changes and those, which did not, were called minor changes.[7]

RESULTS

Of the 108 cases discussed, complete data were available for 91; 70 of these cases (75.8%) were initially diagnosed as epithelial ovarian cancers. The commonest reason for the cases being discussed in the clinico-pathological meeting was to obtain/clarify the grade of the epithelial tumour (n=35) followed by the need to clarify the primary site (n=20). Twenty-three cases were included because of their rarity—as a learning exercise (Table I). In 6 cases

TABLE I. Reasons for cases being discussed in the clinico-pathological meeting

Reason	Epithelial tumours (*n*=70)	Non-epithelial tumours (*n*=21)
Grade of the tumour*	35	0
Site of origin†	20	0
Unusual diagnosis/interesting case	7	16
Requested by pathologist‡	6	1
Mismatch between clinical diagnosis and histology	2	4

* either because grade was not provided or clinician required clarification on the reported grade
† peritoneal carcinomatosis (11) or multiple organ involvement (9)
‡ clerical errors (3), inadequate clinical information (3) and poor quality of slide submitted for review (1)

the pathological diagnosis did not match the clinical impression.

Outcome of the meeting

Change in pathological diagnosis. In 3 cases there was a complete revision of the diagnosis after discussion and review (Table II). Two of these cases had a change in treatment based on the revised diagnosis (major change).

Change in histological grading. Grading was applied to 34 cases, all of which were epithelial cancers. These included 12 cases of stage I ovarian cancers. In 9 of them there was a change in treatment decisions based on the modified report.

Clarification regarding the site of origin. Discussions in the meeting along with clinical inputs, radiology reviews and pathology slide reviews helped to ascribe a definite primary site in 9 of these and affected treatment in 8. In 5 cases, the alteration in diagnosis was contributed mainly by inputs from clinicians while 4 were helped by a review of slides by the pathologists. Despite a detailed review, no primary site could be ascribed in 11 of these cases.

Final outcome

In 48 of 91 cases (52%) the diagnosis was modified after discussion, though a majority were related to the application of grading (34 cases, 37%), 14 cases (15%) had non-grading modifications. The management plan in 20 cases (22%) was affected by the outcome of the meeting (major change). These were due to clarifications in grading (9 cases), alterations/clarifications in histopathology (3 cases), and attributing a primary site of disease (8 cases). Clinical inputs as well as pathological review contributed to changes in diagnosis in 7 cases each (Table III).

TABLE III. Changes in grading, diagnosis and management based on the meeting

Change	Epithelial tumours (*n*=70)	Non-epithelial tumours (*n*=21)	Total (*n*=91)
In diagnosis	46	2	48
Tumour grade	34	0	34
Primary site	9	0	9
Histopathology changed/modified	3	2	5
*In treatment (major change)**	18	2	20

* due to change of grade in 9 cases and other modifications in 11 cases

DISCUSSION

The weekly clinico-pathological meetings led to clarification of several issues. In more than half the cases discussed, additional information came to light. The majority of cases with ovarian tumours in our study were epithelial ovarian cancers. Since this meeting leads to a close interaction between the clinical team and pathologists, there are more modifications in the diagnosis and hence treatment than that provided by a slide review (Table IV).[4–6] Various studies have reported changes in diagnosis (4.5% to 27% of cases).[6–8] While in our study the changes occurred in 52% of cases and seem high, most of these were due to application of/changes in grading of epithelial tumours. Grading of ovarian cancers especially carcinomas helps in prognostication as well as in deciding treatment approaches particularly for stage I disease. Since grading may be provided as part of the routine histopathology report, it may not always be specifically discussed in clinico-pathology meetings. If we consider non-grading modifications alone, then changes occurred in 15% of cases, a figure comparable to that of Santoso *et al*.[1] As we 'select' the cases to be discussed at the clinico-pathology meeting it is likely that the changes seen in our study would be higher compared with those from centres that discuss all their cases in such meetings. Also, some of the cases discussed in our meetings could not be included in the final analysis due to insufficient data. This limitation, inherent to any retrospective analysis, may also have an impact on the final tally.

The ovary is an important site of metastasis of primary tumours arising in the gastrointestinal tract (e.g. stomach, gall bladder, pancreas, colon) and breast. About 1% of cases primarily worked-up as ovarian tumours will ultimately be due to metastasis.[9,10] A clinico-pathological meeting can provide clarity to a number of such cases. Given the poor sensitivity and specificity of other investigations in clarifying the diagnosis in

TABLE II. Details of the cases with a change in histopathological diagnosis

Before meeting		Clinico-pathology meeting discussion	Final diagnosis	Change in treatment
Clinical diagnosis	Pathology report			
Metastatic ovarian carcinoma or primary hepatocellular carcinoma	Possible yolk sac tumour	*Slide review*: Serous papillary cystadenocarcinoma	Primary ovary	Chemotherapy added
Germ cell tumour	Sertoli–Leydig cell tumour	*Clinical input*: Markers and imaging suggest germ cell tumour *Slide review*: Immature teratoma	Immature teratoma	Chemotherapy added
Carcinoma	Serous cystadenocarcinoma (based on review of slides of a private laboratory)	*Histological diagnosis*: Clear cell carcinoma from private laboratory *Slide review*: Clear cell carcinoma	Clear cell carcinoma	No change

TABLE IV. Studies on the outcome of slide reviews and clinico-pathological meetings for patients with ovarian tumours

Author (year)	Type of review	*n*	Diagnosis changed/ modified (%)	Treatment changed (%)
Chafe *et al.*[4]	Pathology slide review	122	26	8
Khalifa *et al.*[5]	Pathology slide review	55	23.6	7.2
Santoso *et al.*[6]	Pathology slide review	109	9.1	4.5
Santoso *et al.*[1]	Tumour board	97	14.4	11.3
McBroom and Ramsay[7]	Clinico-pathological meeting	na	19	6.7
Wong and Birks[8]	Surgical–radiopathological meeting	na	8	27
This study*	Clinico-pathological meeting	91	15	11

* only non-grading changes and resulting treatment modifications have been included
na details of ovarian cancers not available separately

such cases these meetings can have an important role in resolving this problem.[10]

In addition to improving patient care, clinico-pathological meetings are useful teaching–learning exercises for the staff at all levels. The detailed discussion at these meetings enhances understanding of the diagnostic and decision-making process. Though the impact of this particular component was not specifically addressed in our analysis, other studies have made a note of this aspect.[2,11]

Conclusion

Current academic and clinical pressures take their toll on the time available to clinicians. This is especially true in developing nations where the scarcity of specialty centres leads to enormous clinical workload on the existing ones. Clinicians tend to eliminate or skip clinico-pathological meetings as a time-saving strategy. We have shown that such meetings can be very useful and high volume centres might benefit most as the dividends reaped compensate handsomely for the time invested.

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