Original Article

Second-Opinion Histopathology Pak Armed Forces Med J 2012; 62 (3): 365-8

SECOND-OPINION HISTOPATHOLOGY – A STUDY OF 142 CASES AT ARMED FORCES INSTITUTE OF PATHOLOGY (AFIP), RAWALPINDI, PAKISTAN

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ABSTRACT

Objective: To assess the histopathological diagnosis made on the cases sent for second opinion to the Department of Histopathology.

Study Design: A descriptive study.

Place and Duration of Study: Department of Histopathology AFIP, Rawalpindi, Pakistan from July 2010 to April 2011.

Subject and Methods: During the study period, 142 cases were received for second opinion by the department. The demographical details of the patients were entered in a profroma. After initially seeing the H&E slides, immunohistochemical and special stains were applied where required. The initial diagnosis and review diagnosis were then analysed.

Results: During the study period, 142 cases were analysed, 81 were male and 61 female patients. There was wide age range, from 2 months to 90 years. Out of the total 22 (15.5%) were reviewed for benign conditions and 120 (84.5%) were malignant. Majority of cases were from lymphoreticular system. In 72 (50.7%) cases diagnosis was changed on review out of which 9 were benign conditions and rest malignant. Out of the 63 malignant 27 cases and 3 out of 9 benign cases, were those where change in diagnosis was such that it changed the treatment pattern. In 12 cases the review diagnosis was changed from benign to malignant and vice versa.

Conclusion: Getting second opinion on surgical biopsy material is very important part of treatment, particularly in our set up, where all the laboratories are not fully equipped.

Keywords: Audit biopsy material, Second opinion histopathology, Unusual cases

INTRODUCTION

Second opinion after initial histopathological diagnosis is required in different situations. It may be for the patient/relatives satisfaction, satisfaction of the treating clinicians/institutes or sometimes as policy matter of the institute, many hospitals require second opinion of the surgical pathology material[1]. Sometimes second opinion is required when the patient is not responding to the treatment being given after initial diagnosis and then second opinion is requested to find any clinically significant error[2]. Such second opinions help to expose diagnostic errors and proper management of patient. In Pakistan surgical pathology is still not very advanced and only a few centers are fully equipped with all the necessary requirements of a good surgical pathology centre. Most of the centers lack the facility of immunohistochemistry and special stains which is now a days thought to be essential for the diagnosis is certain cases, and this further necessitates the importance of second opinion at good referral centers[3]. The change in diagnosis on second opinion is reported more in the developing countries than those countries where most of the centers are well equipped. Therefore the present study was carried out to find diagnostic change/errors of diagnosis in the cases sent to the tertiary level referral centre.

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Received: 11 Jan 2012; Accepted: 07 Feb 2012

MATERIALS AND METHODS

This descriptive study was carried out at the Department of Histopathology AFIP Rawalpindi, from July 2010 to April 2011. During the study period, 142 cases were received for second opinion by the department. Males were 81 and 61 were female patients. There was wide age range, from 2 months to 90 years. The cases were sent for review from treating clinicians of both civil, 81 cases (mostly from Rawalpindi, Islamabad area) and Military Hospitals (61 cases). The demographical details

of the patients were entered in a profroma. In all cases original slides and slides prepared from blocks were stained for Haematoxylin & Eosin (H&E) staining. Panels of immunohistochemical markers (>150 immunomarkers are being used in the department) and special stains were applied where required. The cases were seen in the departmental consultants meeting and review diagnosis was made. The initial diagnosis and review diagnosis were then analysed.

Data was analyzed using SPSS verion 15. Descriptive statistics were used to describe the data.

RESULTS

During the study period, 142 cases were received for second opinion. Males were 81 (57%) and 61 (43%) were female patients. There was wide age range, from 2 months to 90 years. Immunohistochemistry for second opinion cases was applied in 105(74%) cases. Majority of the cases sent for review were from lymphoreticular system (n=33), followed by gastrointestinal tract (n=27) and bones & soft tissue (n=21). Thirteen cases were of female genital tract/breast and ten from male genital tract. Rest of the cases, were from renal/urinary tract etc (Figure). Out of the total 22 (15.5%) cases were reviewed for benign conditions and 120 (84.5%) were malignant. In 70 (49.3%) cases the review diagnosis remained same (diagnostic agreement) whereas in 72 (50.7%) cases diagnosis was changed on review (disagreement). There were 9 cases reviewed for benign conditions and rest were malignant. Out of the 63 malignant cases, 27 (43%) were those where change in diagnosis was such that it changed the treatment pattern i.e major disagreement (Table-I). In 12 (19%) cases the review diagnosis was changed from benign to malignant and vice versa (Table-2). Even nine benign lesions, where diagnosis was changed, three were those requiring a change in treatment (chronic granulomatous was reviewed as reactive hyperplasia lymph node, infarction intestine as Amaebic colitis and No ganglion cells seen had actually ganglion cells in one section). Out of total 142 cases, 20 (32%) cases were those where initial diagnosis was given as 'differential diagnosis' and cases were sent for review and immunohistochemistry. All these cases were then analysed after performing immunohistochemistry.

DISCUSSION

Everybody does not know every thing or make the right decision all the times. Similarly some pathologists may be very conservative and other may be very aggressive. Therefore it is the patient's and treating clinician's right to get the second opinion if so desired. Other

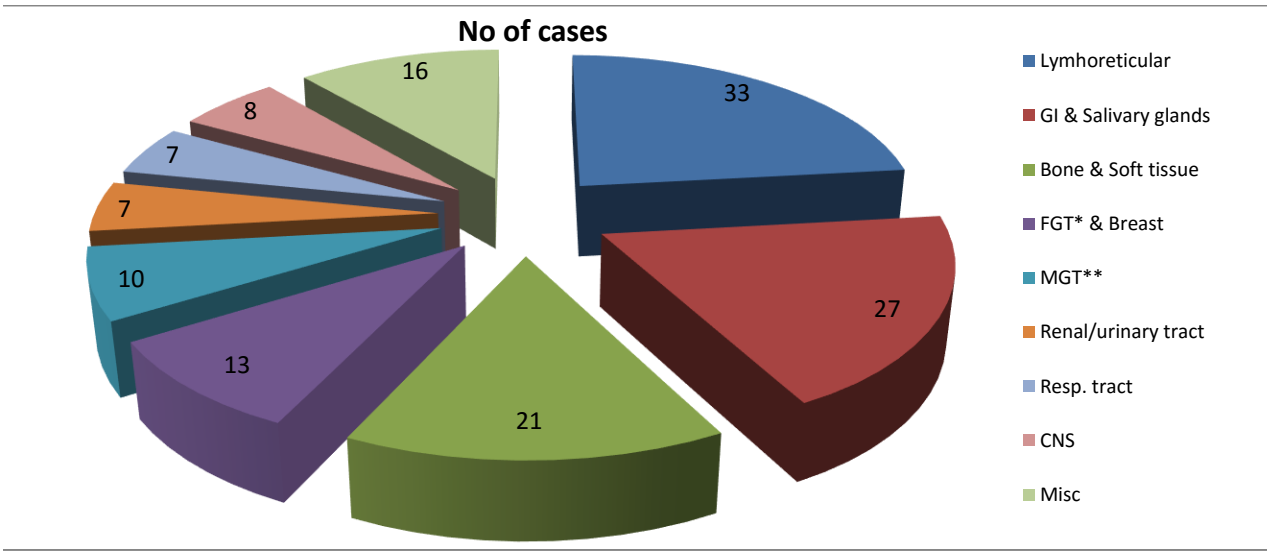

Figure: showing number of cases reviewed of different systems of the body (*FGT - female genital tract **MGT - Male genital tract)

Table 1: Showing cases where diagnosis was changed causing change in treatment

S.No	Site	Initial diagnosis	Review diagnosis
1	Brain	Metastatic Nuroendocrine Ca	Clear cell meningioma
2	Lymph node	Metastatic malignant tumour	DLBCL*
3	Prostate	Adenocarcinoma	Urothelial carcinoma
4	Kidney	Solid pseudopapillary tumour	Clear Cell carcinoma
5	Left arm	Malignant neoplasm	Ewing Sarcoma/PNET
6	Neck mass	Malignant neoplasm	Anaplastic large cell lymphoma
7	Nasal mass	Sinonasal carcinoma	Anaplastic large cell lymphoma
8	Testis	Seminoma	DLBCL
9	Spinal mass	Metastatic adenocrcinoma	DLBCL
10	Mass thigh	Rhabdomyosarcoma	Synovial sarcoma
11	Mass leg	MFH**	Synovial sarcoma
12	Prostate	Urothelial carcinoma	Adenocarcinoma (primary)
13	Lung	Squamous cell carcinoma	Metastatic embryonal carcinoma
14	Skin nodule	Metastatic adenocarcinoma	Skin adnexal tumour (primary)
15	Mass axilla	DLBCL	PNET/Ewing sarcoma

* Diffuse large B cell lymphoma ** Malignant fibrous histiocytoma

Table-2: Showing cases where diagnosis was changed from Benign-Malignant or vice versa

a. Cases where initial diagnosis was benign & review diagnosis was malignant	
Initial Diagnosis	**Review Diagnosis**
1. Kikuchis disease – Lymph node	1. Diffuse large B cell lymphoma (DLBCL)
2. Aneurysmal bone cyst	2. Osteosarcoma
3. Osteochondroma	3. Myxoid chondrosarcoma
4. Toxoplasmosis	4. Hodgkin disease (Mixed cellularity type)
5. Canalicular adenoma – nasal septum	5. Adenoid cystic carcinoma
6. Carcinoid tumour - appendix	6. Diffuse large B cell lymphoma (DLBCL)
b. Cases where initial diagnosis was malignant & review diagnosis was benign	
Initial Diagnosis	**Review Diagnosis**
1. Papillary carcinoma - thyroid	1. Hyperplastic nodule
2. Adenocarcinoma - prostate	2. Granulomatous prostatitis
3. Metastatic adenocarcinoma – kidney	3. Pylitis glandularis
4. Astrocytoma (grade-II)	4. Reactive gliosis
5. Hodgkin disease (Nodular sclerosis)	5. Reactive hyperplasia – lymph node
6. Astrocytoma (grade-III)	6. Reactive gliosis – post infarction

possibilities where second opinion is required are rare diseases/cancer, if no definite diagnosis is given and initial diagnosis is given as differential diagnosis and pathology report describe something unusual. In a similar way if initial diagnosis was made in a small laboratory not fully equipped with all the facilities for histopathology like special stains and immunohistochemistry, second opinion becomes very important[4]. In the present series immunohistochemistry was applied in 74% cases whereas in earlier observation it was applied in 54% of the cases[3]. The most common organ system for which second opinion cases were received was lymhoreticular system which was second in another earlier observation, followed by GI tract[3]. Majority of the cases for which second opinion was requested in the present study were malignant (>84%) and same is reported in most of the other similar series[3,5-8].

The second opinion diagnostic disagreement was more than what was previously reported in the countries having advanced diagnostic technologies[1,2,5]. Change of diagnosis from benign to malignant and converse was also found more in the present series than reported earlier[5,9]. The change in diagnosis leading to the change in the treatment plan was also found more in the present study than what is reported previously from studies

of USA[9,10]. The term partial diagnostic disagreement is used where diagnosis is same but information such as grade or lymphatic and/or vascular invasion is changed, was reported as 20% by Regan et al[5] and 9% by Manion et al[2] whereas in present series it was found in >30% cases. Second opinion is some times even considered for benign conditions or just for confirmation of grade etc[11,12]. In present series 22 cases were for a benign lesion and in 9 of them diagnosis was changed, three out of these nine changes warranted change in treatment. Now a days second opinion is also being sought by tele-pathology even from the distant areas for the view of senior experts which of course depends upon good quality immages[13], such facility at present is not there, in our set up. Some hospitals had made it compulsory second opinion by their own histopathologists before start of treatment. In a study by Kronz et al[1] it was found that in a small percentage it can result in a major change in the treatment. In a recent study it was found that pathology review is most of the time beneficial for the patient but in rare occasion can be harmful particularly if second opinion is obtained long after the start of treatment[14]. Therefore second opinion should be obtained as early as possible before final decision of treatment is made.

CONCLUSION

Getting second opinion on surgical biopsy material is very important part of treatment, particularly in our set up, where all the laboratories are not fully equipped. Even histopathologists working in such laboratories may themselves request for second opinion from centre of excellence and give their diagnosis as differential diagnosis for the benefit of the patients and treating clinicians.

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