Musculoskeletal biopsy (Bone and soft tissue lesions) referred by orthopedic unit in Al-Diwaniyiah teaching hospital

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الخلاصة:

كان الغرض من الدراسة استعراض نوع الخزع النسيجية العضلية الهيكلية والتي يتم ارسالها من وحدة جراحة العظام والكسور في مستشفى الديوانية التعليمي من حيث نوع الاصابة وعددها وعلاقتها بعمر المصاب وجنسه. تمت مراجعة ارشيف الفحص النسيجي ل86 عينة خاصة بمرضى وحدة جراحة العظام والكسور خلال العام 2014. تمت هذه الدراسة في مختبر الفحص النسيجي لمستشفى الديوانية التعليمي. اظهلرت النتائج بأن الخزع النسيجية التي تم ارسالها من قبل وحة جراحة العظام والكسور في عام 2014 قد بلغت 5% فقط من مجموع الخزع النسيجية االتي تم فحصها في هذا العام وهي نسبة قليلة نسباً. شملت العينات 22 حالة مرظية بالنسبة لاصابات العظام بينما كانت نسبة الانسجة الرخوة 64 (74,5 %). كانت هناك فروق واضحة من حيتث العمر بالنسبة لمختلف الاصابات لكن لم يكن بالامكان تعيين القيمة المعنوية لقلة عدد الحالات. لم تكن هناك فروق معنوية بخصوص الجنس لمختلف الحالات المرضية.

كانت النتيجة المسخلصة من الدراسة كالآتي: ان نسبة الخزع النسيجية المرسلة من قبل وحدة جراحة العظام والكسور تعد ضئيلة نسبيا وكانت معظم الحالات من الاورام الحمية او الالتهابات المزمنة في حين كانت نسبة الاورام الخبيثة قليلة جداً.

Abstract

Objectives. To study the frequency and type of bone and soft tissue lesions referred by orthopedic unit in Al-Deewaniyiah teaching Hospital.

Patients materials and methods. The surgical pathology reports of 86 patients presented with bony and soft tissue lesions were studied. Those records belong to the period extending from January 2014 through December 2014. Histopathologic features were reviewed and classification was made.

Results. Lesions referred by orthopedic unit represented about 5% out of all surgical biopsies received by the surgical pathology unit of Al-Deewaniyah teaching hospital. Bony lesions represented 25.5% of lesions while soft tissue lesions represented 74.5% of lesions. There was apparent association between type of lesion and age of the patients. There was no significant association between type of lesion and gender of patients.

Conclusion. Bony and soft tissue lesions represent a minor fraction of surgical specimens examined by surgical pathology unit and most of these lesions are benign

Key words: bony lesions, soft tissue lesions, Al-Diwaniyiah teaching hospital .

Introduction

Proper diagnosis is imperative for the appropriate management of musculoskeletal tumors, and biopsy is a critical step in the diagnosis of bone and soft tissue tumors. The goal of biopsy is to obtain diagnostic tissue while minimizing morbidity, limiting potential tumor spread, and avoiding interference with future treatments [1].

A poorly performed biopsy could become an obstacle to proper diagnosis and may have negative impact on future treatments [2]. Mankin et al. [3] evaluated a study on 597 patients who underwent a biopsy for bone and soft tissue sarcomas. The rate of major errors in diagnosis was 13.5%, and the rate of complications was 15.9%, and unnecessary amputations were performed in 3% of these patients. These events occurred more frequent, when the biopsy was performed in a referring institution, rather than in an oncology center.

As a general rule, unless proven otherwise, all lesions should be treated as if

they are malignant, and the biopsy has to be delayed until the imaging is complete [4]. In fact, the staging of the lesion helps determine the exact anatomic approach to the tumor and specifies the region of the tumor that represents the underlying disease [2]. As an alternative to open biopsy, percutaneous core-needle biopsy techniques have been developed [5].

The literature contains a number of controversies regarding the diagnostic yield of these techniques. The purpose of this paper is to illustrate the current concepts in the biopsy of musculoskeletal tumors. The diagnostic accuracy should be the most important parameter in determining the choice of the biopsy technique. Biopsy tissue can be obtained through a fine-needle aspiration, a core-needle biopsy, or an incisional biopsy [1].

Aims of the study: to review musculoskeletal biopsies regarding type of lesion, frequency and distribution and its relation to age and gender of patients

Patients and methods

The surgical pathology reports of 32 patients presented with bony and soft tissue lesions were studied. Those records belong to the period extending from January 2013 through June 2015. Histopathologic features were reviewed and classification was made.

Results:

The total number of surgical biopsies that have been received by the histopathology lab in Al-Diwaniyiah teaching hospital was 1654 while the number of biopsies that have been sent by the orthopedic Unit was 86 and this accounted for about 5% of the total number, as shown in figure 1.

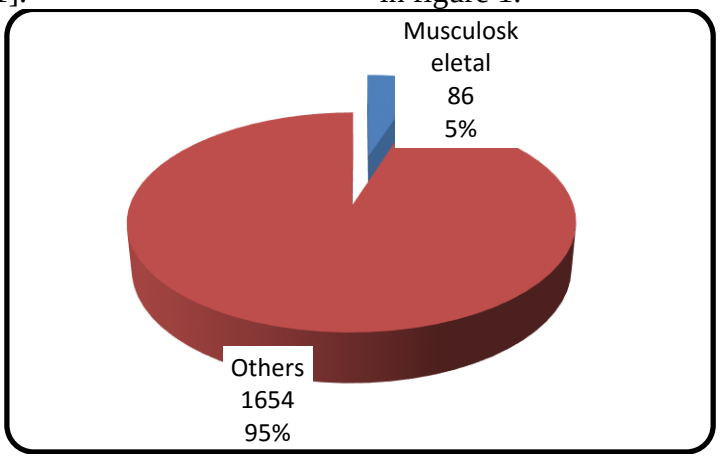

Figure 1: Proportion of surgical biopsies referred from orthopedic unite

Revivew of the histopathological reports revealed that the total number of bony lesions was 22 (25.5%) while that of soft tissue lesions was 64 (74.5%). Individual bony lesions included the following: Osteochondroma (10.47%), Giant cell tumor (4.65%), Osteoid osteoma (2.33%), Chondroma (1.16%), Chobdroblastoma (1.16%), Osteomyelitis (1.16%), Oteophyte (1.16%) and Unremarkable pathology (1.16%).

Table 1: Bone and soft tissue lesions

Pathology		**No.**	**%**
Bone lesions	Osteochondroma	9	10.47
	Giant cell tumor	4	4.65
	Osteoid osteoma	2	2.33
	Chondroma	1	1.16
	Chobdroblastoma	1	1.16
	Osteomyelitis	2	2.33
	Oteophyte	1	1.16

	Unremarkable pathology	2	2.33
Soft tissue lesions	Lipoma	12	13.95
	Chronic non-specific inflammation	10	11.63
	Chronic granulomatous reaction	6	6.98
	Heamangioma	6	6.98
	Fascitis	4	4.65
	Neurofibroma	4	4.65
	A-V Malformation	3	3.49
	Neuroma	3	3.49
	High grade sarcoma	2	2.33
	Baker Cyst	2	2.33
	Chondromyxoid fibroma	1	1.16
	Fat necrosis	1	1.16
	Ganglion cyst	1	1.16
	Fibroma	1	1.16
	MFH	1	1.16
	Total	86	100.00

While soft tissue lesions included the following: Lipoma (13.95%), Chronic non-specific inflammation (11.63%), Chronic granulomatous reaction (6.98) , Heamangioma (6.98), Fascitis (4.65%), Neurofibroma (4.65%), A-V Malformation (3.49%), Neuroma (3.49%), High grade sarcoma (2.33%), Baker Cyst (2.33%), Chondromyxoid fibroma (1.16%), Fat necrosis(1.16%), Ganglion cyst, Fibroma(1.16%), MFH (1.16%).

Mean age of patients according to type of pathology is shown in table 2. Statistical significance was not assessed because of violation of one way ANOVA assumptions, nevertheless wide variation in patient's age with different pathology is apparent.

Table 2: Association between types of lesion with age of patients

Pathology	**No.**	**Mean age (years)**	**SD**
A-V Malformation	3	23.33	14.57
Baker Cyst	2	22.50	3.54
Heamangioma	6	18.00	15.90
Chobdroblastoma	1	20.00	.
Chondroma	1	12.00	.
Chondromyxoid fibroma	1	18.00	.
Chronic non-specific inflammation	9	33.22	20.33
Fat necrosis	1	35.00	.
Chronic granulomatous reaction	5	27.60	13.90
Ganglion cyst	1	45.00	.
Giant cell tumor	4	28.75	17.08
High grade sarcoma	2	49.50	19.09
Fibroma	1	10.00	.

Lipoma	12	37.08	9.98
MFH	1	90.00	.
Fascitis	4	35.50	23.59
Neurofibroma	4	38.25	17.97
Neuroma	2	17.00	18.38
Osteochondroma	8	16.63	7.91
Osteomyelitis	1	11.00	.
Osteomyositis	1	12.00	.
Oteophyte	1	25.00	.
Pyogenic granuloma	1	39.00	.
Schwanoma	5	36.00	17.82
Unremarkable pathology	2	54.00	2.83
Osteoid osteoma	2	10.00	5.66
Total	81	29.70	17.80

Association of type of lesion with gender is shown in table 3. No significant difference was found in type of pathology with regard to gender.

Table 3: Association between type of lesion and gender

	Male		**Female**	
Pathology	**No.**	**%**	**No.**	**%**
A-V Malformation	2	4.55	1	2.38
Baker Cyst	2	4.55	0	0.00
Heamangioma	3	6.82	3	7.14
Chobdroblastoma	0	0.00	1	2.38
Chondroma	1	2.27	0	0.00
Chondromyxoid fibroma	1	2.27	0	0.00
Chronic non-specific inflammation	8	18.18	2	4.76
Fat necrosis	1	2.27	0	0.00
Chronic granulomatous reaction	3	6.82	3	7.14
Ganglion cyst	1	2.27	0	0.00
Giant cell tumor	1	2.27	3	7.14
High grade sarcoma	2	4.55	0	0.00
Fibroma	0	0.00	1	2.38
Lipoma	3	6.82	9	21.43
MFH	0	0.00	1	2.38
Fascitis	2	4.55	2	4.76
Neurofibroma	1	2.27	3	7.14
Neuroma	1	2.27	2	4.76
Osteochondroma	6	13.64	3	7.14
Osteomyelitis	0	0.00	1	2.38
Osteomyositis	1	2.27	0	0.00
Oteophyte	0	0.00	1	2.38

Pyogenic granuloma	1	2.27	0	0.00
Schwanoma	1	2.27	4	9.52
Septic arthritis	0	0.00	1	2.38
Unremarkable pathology	2	4.55	0	0.00
Osteoid osteoma	1	2.27	1	2.38
Total	44	100.00	42	100.00

Discussion

The main point that should be emphasized is that surgical biopsies of musculoskeletal origin represent a minor fraction of all biopsies in histopathology lab. This may be attributable to the fact that most of biopsies might be referred to private labs. On the other hand one can conclude that majority of lesions are either benign neoplastic disorders or reactive inflammatory lesions, whereas malignant lesions accounted for very small fraction and was represented by malignant fibrous histeocytoma and high grade undifferentiated sarcoma. Although statistical significance was difficult to assesses by there was very apparent difference in mean age in patients with different pathologies.

Conclusion

Bony and soft tissue lesions represent a minor fraction of surgical specimens examined by surgical pathology unit and most of these lesions are benign

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