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Primary Malignant Bone Tumours in Basrah

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The aim of the study is to present the pattern of malignant bone tumours in Basrah (South of Iraq).

Material and Methods

Between 1980 and 1999 150 patients with malignant bony tumours were admitted to our service in Basrah. The patients age ranged between 7 and 65 years and 80 were male. Follow-up ranged between seven and 18 months

All patients had routine biochemical, haematological and plain radiography. CAT scan, MRI and bone scans were only performed sometimes. The size of the tumour was very big at the time of initial presentation and only in 25 patients, the size of the tumour was less than 5 cm.

Pain was the dominant factor in 132 patients. A palpable swelling was noticed in 96 patients, ulceration was noticed in nine and five patients presented with the clinical feature of osteomyelitis.

Results

Open incisional biopsy was performed in 127 patients, while needle aspiration was used in 23. No correlation between the clinical findings and the histopathological results were noticed in 23 of patients. A definitive diagnosis was difficult to achieve in 12 patients.

Table 1 demonstrates the histopathological results. One patient with malignant fibrous histocytoma consulted a dermatologist because of multiple bleeding nodules in the skin, Bone to bone secondaries were noticed in two cases. Malignant transformation were noticed in two cases of diaphyseal acalasia, two cases of chondroma and two cases of benign giant cell tumour. One patient had giant cell tumour at the site of retained shell, another patient had fibrosarcoma of the tibia at the site of previous Shanz screw of external fixation. All presented late, none were seen before four months of their initial symptoms.

Table 1

1. Osteogenic sarcoma	39
2. Ewing sarcoma	30
3. Chondro sarcoma	25
4. Giant cell tumor	13
5. Fibro sarcoma	16
6. Multiple myeloma	6
7. Malignant fibrous histocytoma	8
8. Lymphoma	3
9. Squamous cell carcinoma	3
10. Solitary myeloma	2
***11.* No clear cut diagnosis**	5

More than half of the patients were first seen 4 months or later after the initial symptoms by an orthopaedic surgeon. Only 40 patients consulted the orthopaedic surgeon as their first choice. Thirty patients had local steroid injection for their localized pain. One-hundred twenty were wandering between colleagues, asking for second, third, or even fourth opinions. One-hundred twenty-nine of the patients ended up with an amputation. Twelve patients had wide local resection. The defect was filled by bone cement. Nine were inoperable.

Four local recurrences were noticed in mid-thigh amputation stump for tibial tumour and one stump recurrence in high amputation for tumour in the lower end of the femur. Remarkable improvement in the immediate post-operative period was noticed in the general condition of the patients following amputation.

All patients were referred to the local oncology centre for chemotherapy, radiotherapy or both. All the amputees were referred to the prosthesis centre for fittings. The two-year survival rate was 53. Only 10 patients with low-grade chondrosarcoma and one osteosarcoma were alive after five years. One-hundred forty-two patients died because of pulmonary problems.

Discussion

Primary malignant bone tumours are more prevalent in Basrah, Iraq than they are in Europe [15]. This increase is more obvious after 1995. The reason behind the obvious delay in presentation and diagnosis were related to the lack of clinical awareness, under estimation of the seriousness of the condition, mild pain, the deceiving effect of prolonged use of analgesia, handling by inexperienced physicians, and the fear of aggressive surgery like amputation. But because of the increase in the incidence of malignancy in general in Basrah after 1995, people are much more aware of this problem, so they now present earlier. Delay in diagnosis was also recorded in other studies, like osteoblastoma in the cervical spine and sarcoma of the pelvis [7]. The tumour size was big, which is related to delay in presentation and diagnosis. The size of the tumour has a very significant effect on the risk of systemic disease and the prognosis, If the size of the tumour is greater than 10 cm in diameter, it is significantly less likely to be controlled [4]. Ten patients proved to have a family history of malignancy, so obtaining family history of malignancy is an important aspect of the evaluation. The genetic predisposition is a well-documented fact [5].

All patients were active and healthy, some performed sports activities. History of local trauma was obtained from 80% of the cases. The correlation between trauma and malignancy is still controversial. Trauma may affect the host-tumour balance [7]. The author feels that there is some relationship between trauma and malignancy though trauma is over-blamed in our locality I feel that the association between retained implant and malignancy is coincidental rather than aetiological. This idea is supported by other studies [6,9,10].

All patients were subjected to biopsy. Bone biopsy is probably the most crucial aid for the definitive diagnosis of malignant bone tumour. It is essential for the pathologist to know that the tissue to be studied is representative. Only 23 had fine needle aspiration, because personally I prefer the open incisional biopsy. Though the accuracy of needle aspiration is very high [8], it can only be interpreted by a very experienced pathologist. Recently emphasis was put on ultra-sound-guided needle biopsy[13]. Some difficulties and confusion in biopsy results were noticed in this study. Errors are almost inevitable, probably the most difficult tissue sample to be interpreted is sample taken from bone tumuor. Getting the opinion of more than one pathologist, orthopaedic surgeon, oncologist. radiologist, in addition to performing more sophisticated investigation may solve some diagnostic problems. Malignant transformation was noticed in this study, so excision of benign, borderline, or premalignant lesions are recommended.

Surgical interference in form of amputation or excision was the first line of treatment,

surgery alone may lead to cure, but adding chemotherapy, radiotherapy' or other treatment modalities will reduce the chance of recurrence and metastasises. The reason for the high percentage of amputation and inoperability in this study were related to the delayed presentation and refusal of surgery in the initial stages of the disease.

Limb salvage is not always superior to amputation. Sometimes a well-planned amputation with good fitting prosthesis in addition to chemotherapy and radiotherapy may give satisfactory results. Twelve (8%) patients had wide local excision with gratifying results. The bone defects were filled by bone cement ~ There are many other options in use to fill the gaps [1,2,3,11,12, 14]. Five (3.3%) stump recurrence were recorded in this study but I have no clear explanation for the recurrence in mid-thigh amputation for a tumor in the tibia, whoever, the most important factor to reduce recurrence is the margin of resection which should be reasonable and should include a cuff of normal tissue.

Proximal location, male sex, and hyperploid DNA content carry a bad prognosis [8]. Unfortunately, we do not have facilities for DNA analysis. The high mortality rate in this study is directly related to the lack of clinical awareness, under-estimation of the seriousness of the condition, the fear of major surgery like amputation and finally the shortage of modern facilities for investigation and treatment.

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