

Submission of abstract for Scientific Program of 2015 Meeting of the International Society of Limb Salvage (ISOLS)

Title: Multicentric Giant Cell Tumor of Bone_ a series study of 10 Cases

Author: Deng, Zhiping 1 MD dengzhiping2000@163.com

Coauthors: Jin, Tao 1 MD jin-tao1984@163.com

Chan, Chung Ming 2 MD chancm@ortho.ufl.edu

Zhang, Qing 1 MD zhangqing6863@vip.sohu.com

Hao Lin 1 MD haolin851@163.com

Scarborough, Mark 2 MD scarbmt@ortho.ufl.edu

Niu, Xiaohui 1 MD niuxiaohui@263.net

Institution: 1 Department of Orthopaedic Oncology Surgery, Beijing Ji Shui Tan Hospital,
Peking University, Beijing, People's Republic of China.

2: Division of Orthopaedic Oncology, Department of Orthopaedic Surgery and
Rehabilitation, University of Florida, Gainesville, Florida USA

Level of Evidence: IV

Abstract:

Background:

Giant cell tumor (GCT) of bone is a benign but locally aggressive tumor that usually involves the epiphysis of long bones. Multicentric involvement in patients with giant cell tumor of bone is rare and only occurs in about 1% of the all giant cell tumor patients. This tumor can present as multiple synchronous or metachronous lesions. The differential diagnosis should include many multicentric tumors, such as brown tumor, giant cell reparative granuloma, enchondromatosis, Paget's disease, fibrous dysplasia, Langerhans cell histiocytosis. Because of its rarity, there are only several series reports and a few case reports about this disease.

Questions/Purposes:

The purposes of this study were: (1) to evaluate the characteristics of multicentric giant cell tumor of bone; (2) to evaluate treatment and the oncological result of this tumor.

Patients and Methods:

A retrospective study was obtained to evaluate the characteristics of multicentric giant cell tumor of bone. Data was collected from the JST orthopaedic oncology database. Ten cases were identified from 1999 Feb to 2014 July. All of these patients had two or more giant cell tumors of bone and the pathologic diagnosis was reconfirmed by the pathologists. Clinical information and follow-up data were obtained from our orthopaedic oncology database.

Results:

There were 10 patients (8 male and 2 female) with a total of 29 tumors (mean 2.9 tumors per patient, range 2-9). The median age was 23 years old (range 15-41). The epiphysis of a long bone was the main location for tumors, including 4 cases at distal part of femur, 4 at proximal part of tibia, 4 at proximal part of femur, 4 at proximal part of humerus, 2 at proximal part of fibula, 1 at distal part of tibia and 1 at distal part of radius. Other tumor location

included 4 cases at metacarpal bones, 1 at phalanx, 1 at tarsal bone, 1 at talus, 1 at calcaneus and 1 at 1st lumbar spine.

Five cases were synchronous multicentric disease in which the lesions interval less than 6 months. Another five cases were metachronous in which the second lesion occurred more than 6 months after the first lesion. Four patients were recurrent cases when referred to our hospital having received the previous surgery of curettage elsewhere.

The lesions were curetted or excised according to the location and aggressiveness. One below knee amputation was done to one patient presented with multiple lesions of tibia, talus and calcaneus after recurrence. Local recurrence occurred in two cases of proximal part of femur with curettage. Resection and prosthetic replacement were done to these two patients. Distal metastasis occurred in two patients. One developed lung metastasis and died from the disease 40 months later from the first surgery. Another patient developed retroperitoneal, phrenic and pulmonary metastasis and was alive with the disease at the latest follow-up. Other patients were disease-free at the end of follow-up.

Conclusions:

This series is a relatively large single institution series of this rare tumor. The multicentric giant cell tumors of bone have the undistinguishable characteristic with the solitary giant cell tumor. Excluding other multicentric lesions was helpful to get the correct diagnosis. Treatment options rely on the tumor location and aggressiveness. The oncological result is comparable to the solitary tumor. Long time follow-up is necessary to these patients.