

**FC-135****Giant cell tumor of the distal radius: is resection better?****R. Turcotte**<sup>1</sup>, H. Sawan<sup>1</sup>, P. Ferguson<sup>2</sup>, J. Wunder<sup>2</sup>, M. Isler<sup>3</sup>, S. Mottard<sup>3</sup>, J. Werier<sup>4</sup>, H. Abdelbary<sup>4</sup><sup>1</sup> McGill University Health Centre, Montreal, Canada<sup>2</sup> Mount Sinai Hospital, Toronto, Canada<sup>3</sup> Maisonneuve-Rosemont Hospital, Montreal, Canada<sup>4</sup> Ottawa Hospital, Ottawa, Canada

**Purpose:** Giant cell tumor of bone (GCT) is a benign disease usually treated by extended curettage and cementing /bone grafting. There have been reports suggesting that GCTs involving the distal radius are more aggressive in their behavior, predicting higher rates of local recurrence and increased incidence of lung metastasis. For these reason some have favored en bloc resection of the distal radius over extended curettage. Although many treatment options exist their oncologic and functional outcome are still vaguely estimated. The aim of our study was to focus on GCT of the distal radius, comparing local control, metastatic rate and function between those who underwent curettage and those who underwent en bloc resection with wrist arthrodesis.

**Methods:** Four Canadian institutions collaborated to this work. Cases were identified through prospective databases in existence in each center. 58 patients were recorded between 1989-2011 with giant cell tumors of the distal radius. Age ranged from 18 to 69 years old (mean 25). 57% were female. The mean follow-up was 86 months (range 1 to 280 mos). 15 were classified as Campanacci Gr 2 and 40 were Gr 3 (4 unknown). 16 had fractured. 35 patients underwent extended intralesional curettage. Bone cement was used in 23 of them and internal fixation was used in one. 11 were bone grafted among which 7 needed internal fixation. Wide resection and wrist arthrodesis using plate and screws for fixation where preformed on 23 patients from which 7 had free vascularized fibula transfer. All resection were performed for Gr 3 tumors.

**Results:** There were no deaths or lung metastases in both groups. 10 local recurrences occurred in the curettage group (29%). 9 of them where Campanacci grade 3. 9 of the 11 patients had PMMA insertion. This group had no other post-operative complications. Among these 10 recurrences, two had one more local recurrence. 3 of the 10 recurrences ultimately required resection. The primarily resected group sustained one local recurrence (4%) but 7 post-operative complications (30%) including 4 infections, 1 malunion, 1 nonunion and 1 fracture. Difference in local recurrence rates was significant ( $p = .021$ ). Complications beside local recurrence were only reported in the resection group. The median Musculoskeletal Tumor Society score was 33 in the curettage group and 27 in the resection group ( $p = .103$ ). The Toronto Extremity salvage Score in the curretted group displayed a median score of 94.7 compared to 85.1 for the resection group ( $p = .012$ )

**Conclusions:** Intralesional curettage is an effective alternative to wide resection with the advantage of preserving the distal radius and wrist function but with indeed a notable local recurrence rate. Most local recurrence could be managed with iterative curettage. Wide excision showed significantly lower recurrence but was technically challenging and associated with many post-operative complications. Resection should be reserved for most severe Gr 3 tumors.