ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

10th Biennial ISAKOS Congress • June 7-11, 2015 • Lyon, France

Paper #85

Proximal Humerus Tumours: Are they Being Missed?

Cameron Michael Anley, MBCHB, M Med (Ortho), SOUTH AFRICA
Tarek Boutenouch, MBChB, UNITED KINGDOM
Lee Jeys, FRCS, UNITED KINGDOM
Simon Carter, MB,BS, FRCS(Eng), FRCS(Glas), UNITED KINGDOM
Kirti D. Moholkar, MBBS, MS, FRCS, UNITED KINGDOM

The Royal Orthopaedic Hospital
Birmingham, UNITED KINGDOM

Summary:
Proximal humerus tumours should always be included in the differential diagnosis of patients with shoulder pain. In our study, 41.4% of patients with malignant tumours where initially diagnosed and treated (incl 4.8% having an arthroscopy) as other shoulder conditions, leading to a 16 week delay in treatment of the tumour. Appropriate imaging should be timeously obtained to diagnose these tumours.

Abstract:
OBJECTIVE
The estimated lifetime prevalence of shoulder pain in the UK is 16% - 26%, accounting for the third most common cause of musculoskeletal consultations in primary care. Although very uncommon, proximal humerus tumours should always be considered as part of the differential diagnosis in these patients. Recent studies have shown the increased use of ultrasound, without the addition of plain film radiographs, in the work-up of patients with shoulder pain. As the preferred initial imaging modality for the diagnosis of tumours remains plain film radiography, one of the potential negative consequences of this practice is a delay in the diagnosis of tumours. The purpose of this study was to assess the initial diagnosis and management in patients who were subsequently diagnosed with a proximal humerus tumour.

METHODS
After obtaining the relevant ethical approval, the medical records of all patients with proximal humerus tumours, both malignant and benign, referred to the oncology division between 2007 and 2013 where reviewed for this study. Patients with insufficient information, tumours noted as incidental findings in asymptomatic patients and metastases with known primaries where excluded. The remaining medical records where reviewed to establish the initial diagnosis and management of these patients prior to the diagnosis of a proximal humerus tumour.

RESULTS
A total of 104 patients, 58 malignant, 39 benign and 7 borderline tumours, where included in this study. The average age of the patients was 36.8 years (range 5 – 84) with 59 males and 45 females. In the malignant group, an alternative diagnosis was initially made in 41.4% (24/58) of the patients with the most common diagnoses being rotator cuff pathology (30%), adhesive capsulitis (29%) and non-union (17%). The eventual diagnosis in these patients included Chondrosarcoma , metastases (previously unknown primary), Osteosarcoma, Ewings sarcoma and Non-Hodgkins Lymphoma.

Various treatments where undertaken prior to diagnosis including Lymph node biopsy, reassurance, physiotherapy, steroid injection and/or shoulder arthroscopy. Many of these patients had been treated with limited imaging. The incorrect initial diagnosis and treatment resulted in a 16 week delay in treatment of the tumours.

In the benign and borderline groups, concurrent pathology was higher, with many patients undergoing treatment for a shoulder condition in the presence of a previously diagnosed benign bone tumour. In 6.5% (3/46) however, the diagnosis of a benign or borderline lesion was only made after an arthroscopy on postoperative imaging for

persistent pain.

CONCLUSION
In this study, 41.4% of patients with malignant tumours of the proximal humerus where initially diagnosed and treated as other shoulder conditions, with 4.8% undergoing an arthroscopy. On average, the misdiagnoses lead to a 16 week delay in treatment of the tumour. Appropriate imaging should be timeously obtained and reviewed to prevent a delay in the diagnosis and treatment of these tumours.