

Neoplasms of the scapula – A report of four cases

Prof. Mayil Vahanan Natarajan, Dr. K. Anbazhagan, Dr. V. Thulasiraman, Dr. T.R. Ramesh Pandian, Dr. A.N. Sarath Babu
Dept. of Orthopaedics, Govt. General Hospital & Madras Medical College, Chennai-3

ABSTRACT

The aim of the study is to highlight our clinical exposure in the incidence and management of scapular tumors. Scapular tumors pose a challenging issue for orthopaedicians because of the proximity to shoulder girdle and numerous neuro-vascular structures surrounding it. We are presenting four cases of scapular tumors of different cells of origin admitted in Govt. General Hospital during 2005 – 07. All these cases presented with mass surrounding the shoulder with or without pain and none with metastasis. Out of these tumors three were treated with total scapulectomy without prosthesis and one with prosthesis. Shoulder motion and strength are nearly normal following total scapulectomy with near normal range of movements achieved. Suspension of the proximal humerus and meticulous soft tissue reconstruction are the key for providing shoulder stability and a functional extremity.

Key words:

Scapular tumors, Tikhoff Linberg procedure, scapular prosthesis.

INTRODUCTION

Scapula is a relatively common site of primary bone tumors including chondrosarcoma in adults and Ewing's sarcoma in children. Metastases are rare. They often present with mass or pain or both. Tumors arising from scapula are often initially contained by muscle, thereby protecting other tissues. Important anatomic areas to evaluate for tumor extension are the chest wall, axillary vessels, proximal humerus, gleno-humeral joint and the rotator cuff. We describe bone neoplasms of different cells of origin and their management with clinical history and imaging modalities.

MATERIALS AND METHODS:

4 patients in the age group 10 to 60 years, 3 males and 1 female in our hospital 2005-07 was taken up for study.

AGE	GENDER	COMPLAINTS	DIAGNOSIS	TREATMENT	PROSTHESIS
12yrs	male	mass	Ewing's Sarcoma	Tikhoff/Linberg type - III	none
29yrs	female	pain / mass	chondro-myxoid Fibrosarcoma	type - III	none
37yrs	male	mass	spindle cell Neoplasm	type - II	yes
38yrs	male	mass	chondro-sarcoma	type - III	none

Table - 1

Case -1:

12/m boy presented with progressive swelling in the Right Scapular region for six months. It is 8 X 4 cm diffuse swelling. Margins are ill defined. Firm in consistency. Shoulder movements are normal and there is no distal neuro-vascular deficit. Blood investigations are within normal limits. Biopsy was proved as Ewing's Sarcoma. The boy had pre-op chemotherapy and underwent Tikhoff-Linberg procedure type III procedure. Elbow extension and shoulder mobilization were started 2-4 weeks after surgery. Motor strengthening exercises after 6 weeks.



Fig 1 A Pre-operative plain x-ray

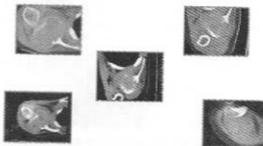


Fig 1 B CT scan - right shoulder

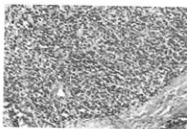


Fig 1C Histopathology of the tumour

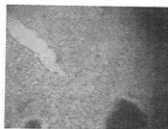


Fig 2B Histopathology



Fig 1D Postoperative plain x-ray



Fig 2C Post OP plain X-ray

Case -2:

29/f presented with pain in the left shoulder for 2 months and associated with swelling and restriction of shoulder movements for the past 1 month. It is 15 X 10 cm diffuse swelling from root of the neck to acromion. Supra clavicular fullness present. Range of movements includes Abduction 20 degrees, flexion 10 degrees, and internal rotation 10 degrees. No other movements possible. There is no distal neuro vascular deficit. Biopsy was proved as Chondro-myxioid fibroma. Underwent Tikhoff- Linberg procedure type III.



Fig 2A Pre-op plain x-ray

Case- 3:

57/m presented with swelling in the left shoulder for the past 1 year. It is 8 X 8 cm diffuse firm swelling in the left shoulder. Shoulder movements were restricted. No distal neuro-vascular deficit. Biopsy was proven as Spindle cell neoplasm. The man underwent Tikhoff- Linberg procedure type II with custom made prosthesis. Shoulder and Elbow movements were near normal with no metastasis detected till their last follow up



Fig 3A Post op plain x-ray with scapular prosthesis

Case -4:

58/m presented with diffuse swelling in right shoulder for the past 8 months Diffuse swelling 10 X 8 cm with supra clavicular fullness present. No distal neuro vascular deficit present. Shoulder and elbow movements were normal. Biopsy was proven as chondrosarcoma and the patient underwent Tikhoff- Linberg

procedure type III. No metastasis detected till their last follow up.



Fig 4A Pre-op x-ray

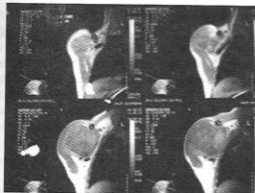


Fig 4B CT scan showing the tumour

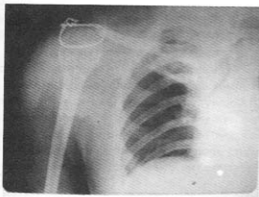


Fig 4C Post op x-ray

RESULTS

All patients are removed of their primary with no residual tumor and showed excellent cosmetic appearance and good shoulder movements until their last follow up. No metastasis was detected till now.

DISCUSSION

Scapula is a small bone in which many neoplasms can develop. Scapular tumors are varied by their dif-

ferent cells of origin. Because of the rarity of metastasis, total scapulectomy with or without prosthesis can be done with good results. The present surgical classification system is based on the current concepts of surgical margins, the relationship of the tumors to anatomic compartments (intra or extra compartmental), the status of the gleno-humeral joint, the magnitude of the individual surgical procedures and precise consideration of the functionally important soft tissue components.

Type I: Intra articular proximal humeral resection

Type II: Partial scapular resection

Type III: Intra articular total scapulectomy

Type IV: Extra articular total scapulectomy and humeral head resection

Type V: Extra articular humeral and glenoid resection

Type VI: Extra articular humeral and total scapular resection

In our study we did type II and type III resections. Type II resection is performed for low grade osseous malignancies of the scapula that invade the medial scapular body. Reconstruction is performed using local muscle transfers and attaching these to the remaining scapula.

Type III intra articular total scapulectomy is performed for soft tissue sarcomas that secondarily invade the scapula and for primary malignancies of the scapular body that do not invade the gleno humeral joint. Reconstruction is performed using scapular prosthesis if adequate soft tissues remain for the reattachment to scapular prosthesis. Otherwise, the proximal humerus is suspended from the distal clavicle adjacent muscles retransferred to provide stability.

CONCLUSION

Scapular tumors are not uncommon in orthopedic practice. Mostly present with mass or pain or both. Most of them are amenable for total scapulectomy with or without prosthesis and close follow up is mandatory for recurrence and for metastasis. The key to shoulder reconstruction with prosthesis depends on adequate periscapular soft tissues.

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