Abstract: BACKGROUND To emphasize the importance and diagnosis of neglected nonunion scapular spine fracture presenting as an unusual cause of shoulder impingement. Also the functional outcome following open reduction, internal fixation and bone grafting. MATERIAL AND METHOD 63 years old male patient who had Road Traffic Accident and sustained direct injury to his right shoulder for which he had native treatment for a period of four months. He presented as persistent pain crepitus on overhead abduction. X ray (supraspinatus outlet view) reveals fracture spine of scapula nearer to its acromion base. 3D CT Scan and MRI Scan was taken to know further extent of fracture and soft tissue involvement.. Fracture ends curetted and sclerosed ends freshened and fracture fragments fixed with 2.7 mm 10 holed DCP with cortical screws and cancellous bone graft applied over fracture site(harvested from right side iliac crest). RESULTS He continued to make excellent progress and had full painless function in the shoulder girdle at his last review two year post surgery and subsequently returned to full work duties. CONCLUSION Underlying cause of shoulder impingement should be identified and treated appropriately. All scapular spine fracture nonunion will invariably go for bony union(even in late cases) when fixed by open reduction and internal fixation bone grafting whereas nonunion occurs in conservative management however prolonged it is. Patient regained excellent full range of shoulder movements following surgical fixation. 

Keyword: Unusual shoulder impingement, Neglected Scapular Spine Fracture

TITLE:
Neglected Nonunion Of Scapular Spine Fracture as an unusual cause of shoulder impingement. -importance of diagnosis and its management.

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MRI SCAN - Degenerative Signal in Supraspinatus Tendon but no tear. Widened and disrupted AC Joint with intervening soft tissue.

Procedure:
Patient in left lateral decubitus position and standard preparation of right arm, shoulder, scapula, and iliac crest was carried out.

The incision was made one finger breath above and parallel to the spine of scapula, extending from 6 cm medial to palpable fracture site to the posterolateral corner of acromion. Deltoid-Trapezius fascia was opened along the line scapula using sharp dissection. Trapezius insertion over the nonunion fracture site was lifted off subperiostially. Minimal dissection of supraspinatus muscle belly was done to expose fracture site.

Fracture ends curetted and sclerosed ends freshened and fracture fragments fixed with 2.7 mm 10 holed DCP with cortical screws and cancellous bone graft applied over fracture site (harvested from rightside iliac crest) Post op

Follow up:
He continued to make excellent progress and had full painless function in the shoulder girdle at his last review two year post surgery and subsequently returned to full work duties.

Discussion:
Scapular spine fractures are generally a result of high energy trauma.

- Nonunion of scapular spine at the base of the acromion caused persistent pain and presenting as secondary impingement with significant limitation of function. Continuous lateral traction due to weight of the arm also produced fatigue and pain in his trapezius muscle.
- Nonunion of scapular spine site cause pecking effect over supraspinatus while abduction.
- Ogawa et al. emphasized that displaced symptomatic fractures lateral to the acromial angle treated with k-wires and TBW whereas Plate fixation for more medially displaced fractures involving the spine.
- Robinson et al., who reported a case of symptomatic nonunion fracture of lateral scapular spine, which was successfully treated with open reduction and internal fixation.
- Shindle et al described plate fixation for stress fracture involving scapular spine in chronic rotator cuff arthropathy.

Conclusion:
Underlying cause of shoulder impingement should be identified and treated appropriately. All scapular spine fracture nonunion will invariably go for bony union (even in late cases) when fixed by open reduction and internal fixation & bone grafting whereas nonunion occurs in conservative management however prolonged it is. Patient regained excellent full range of shoulder movements following surgical fixation.

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