

Posterior Sternoclavicular Joint Dislocation Presenting as Acute Torticollis in a Kabaddi Player: A Case Report

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Learning Point of the Article:

Posterior sternoclavicular joint dislocation can rarely present as torticollis, and should be considered in post-traumatic neck posturing, with timely imaging and closed reduction offering excellent outcomes even in delayed cases.

Abstract

Introduction: Torticollis is an abnormal head posture with a broad differential diagnosis. Posterior sternoclavicular joint (SCJ) dislocation is a rare and potentially life-threatening injury because of its proximity to the mediastinal structures. Torticollis as the presenting feature of posterior SCJ dislocation has not been previously described.

Case Report: A 16-year-old male kabaddi player presented with acute right-sided torticollis and left upper limb pain 3 days after a tackle injury. Imaging confirmed a posterior left SCJ dislocation without vascular compromise. Closed reduction under general anesthesia using abduction-traction-extension under fluoroscopic guidance restored SCJ alignment and completely resolved the torticollis. The patient was immobilized and subsequently underwent gradual rehabilitation. At 6-week and 2-year follow-up, he had full, pain-free shoulder motion, no residual deformity, and had returned to sports.

Conclusion: Posterior SCJ dislocation can rarely present as acute torticollis, possibly because posterior clavicular displacement alters the mechanics of the sternocleidomastoid muscle. This case emphasizes early imaging, multidisciplinary planning, and cautious closed reduction in stable patients without vascular compromise.

Keywords: Adolescent, sternoclavicular dislocation, torticollis, sports injuries.

Introduction

Torticollis is an abnormal head posture characterized by ipsilateral head tilt and contralateral chin rotation. Its causes include musculoskeletal, neurological, ophthalmic, auditory, and traumatic conditions [1]. Posterior sternoclavicular joint (SCJ) dislocation is rare and potentially life-threatening because of the close relationship of the medial clavicle to the trachea, esophagus, and major vessels [2]. Although SCJ dislocations may cause pain, shoulder dysfunction, dysphagia, respiratory symptoms, or neurovascular complications, torticollis has not

been described as a presenting feature [3, 4]. We report a rare case of posterior SCJ dislocation in a young kabaddi player presenting primarily with acute torticollis.

Case Report

A 16-year-old teenager presented to the emergency department with complaints of neck tilt and pain in the left upper limb following a fall during a kabaddi match 3 days ago. The injury occurred after being tackled, with a brief episode of giddiness

Author's Photo Gallery



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Figure 1: Clinical photograph showing right-sided torticollis and asymmetry of shoulder and ear levels.

during a kabaddi session. The patient could not recall the precise mechanism of injury.

He reported right-sided head tilt and pain exacerbated by movement. He denied any breathing difficulty, dysphagia, or hoarseness. No visible external injuries or neurological deficits were noted. Examination revealed: Torticollis with head tilted to the right, left shoulder positioned lower than the right, and tenderness over the left SCJ (Fig. 1).

Initial X-ray and non-contrast computed tomography (CT) revealed a posterior dislocation of the left SC joint. Given the proximity of large vessels to the injury site, CT angiography was performed, which revealed large vessels abutting the medial end of the clavicle (Fig. 2). A multidisciplinary management plan was discussed among orthopedic, vascular surgery, and

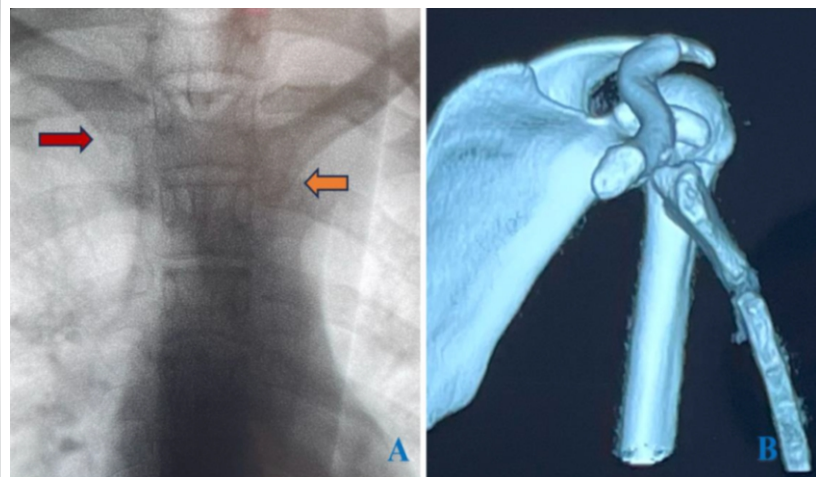


Figure 2: Imaging showing posterior dislocation of the left sternoclavicular joint. (a) Radiograph; (b) 3D computed tomography reconstruction.



Figure 3: Post-reduction serendipity radiograph showing restored and symmetrical sternoclavicular joint alignment.

anesthetic teams. The agreed plan was to attempt manipulation under anesthesia as the first step. On the 4th day post-injury, the patient was taken to the operating room. The patient was positioned supine with a sandbag between the scapulae. Closed reduction was performed using the abduction-traction-extension technique under fluoroscopic guidance [5]. A sheet was used around the upper torso to give counter-traction by the assistant. The C-arm was positioned over the SCJ area with a 45° cephalad tilt to obtain serendipity views. Reduction was appreciated with the clunk. Post-reduction serendipity views confirmed symmetrical clavicular alignment over the SCJ (Fig. 3). Distal vascularity of the upper limb was assessed at wrist level for 30 min continuously and was intact. Intraoperative assessment of joint stability on shoulder range of motion was satisfactory. In the post-operative recovery room, torticollis deformity was seen fully reversed. Left upper limb was kept in the shoulder sling.

The patient was discharged the next day with advice on immobilization for 2 weeks and gradual mobilization. At 6-week follow-up, he regained full, pain-free range of motion without any instability. At 2-year follow-up, the patient was continuing with his sports activity with no residual pain or deformity (Fig. 4).

Discussion

Posterior SCJ dislocation is rare, accounting for approximately 3% of shoulder-girdle injuries and <1% of all joint dislocations [6]. Its infrequency makes diagnosis and management challenging, while posterior displacement carries additional risk because of the adjacent mediastinal structures [7]. Indirect force transmitted through the clavicle, particularly during contact sports, is a common mechanism [2].

Because of the risk of vascular, airway, or esophageal



Figure 4: Two-year follow-up photographs showing symmetrical shoulders and complete resolution of torticollis.

injury, prompt diagnosis and careful planning are essential. CT, preferably with angiography when vascular involvement is suspected, provides accurate assessment of the dislocation and adjacent structures [8]. In stable patients without vascular compromise, closed reduction is generally the initial treatment, whereas open reduction and stabilization are considered when closed reduction fails, instability persists, or mediastinal complications are present [2, 3]. In our patient, closed reduction remained successful despite presentation 3 days after injury.

Damschen et al. reported favorable return-to-sport outcomes

after closed reduction of acute traumatic posterior SCJ dislocations, with 23 of 31 patients returning to pre-injury activity and a mean return-to-sport time of 3.1 months [9]. Our patient returned to sports at approximately 2.5 months without functional limitation. Relevant pediatric and adolescent cases are summarized in Table 1.

Torticollis appears to be an exceptionally uncommon presentation of SCJ dislocation. Galanis et al. [10] reported a 12-year-old judo athlete with posterior SCJ dislocation who had severe SCJ pain and other local symptoms but no torticollis. Other reported pediatric and adolescent cases similarly describe pain, deformity, or upper-limb symptoms rather than abnormal neck posture. Thus, the present case appears distinctive because torticollis was the dominant clinical manifestation.

The postural abnormality in our patient may be explained by altered sternocleidomastoid (SCM) mechanics. Torticollis is usually produced by asymmetric SCM activity, with contraction of one SCM producing ipsilateral head tilt and contralateral rotation. In this case, the head tilted away from the side of the posterior SCJ dislocation, suggesting relative overactivity of the contralateral SCM.

We hypothesize that posterior displacement of the medial

Table 1: Reported pediatric and adolescent posterior sternoclavicular joint dislocations

Study	Age/sex	Mechanism/sport	Presentation	Treatment	Outcome
Galanis <i>et al.</i> , 2014 [10]	12-year-old boy	Judo	SCJ pain; no torticollis reported	Closed reduction under GA	Full ROM at 2 years
Ishii <i>et al.</i> , 2018 [11]	14-year-old boy	Sports injury	Posterior SCJ injury; no torticollis reported	Temporary K-wire SCJ stabilization	Successful stabilization
El Khassoui <i>et al.</i> , 2023 [12]	12-year-old boy	Kickboxing	Shoulder/clavicular symptoms; no torticollis reported	Closed reduction	No complications at 24 months
Gurcinar <i>et al.</i> , 2023 [13]	13-year-old boy	Football	Pain, deformity, upper-limb numbness; no torticollis reported	Closed reduction under sedation	Full ROM and strength by 8 weeks
Kralj <i>et al.</i> , 2023 [14]	15-year-old boy	Trauma	Posterior SCJ dislocation; no mediastinal injury	Open reduction and cerclage	Asymptomatic follow-up
Ngatchou <i>et al.</i> , 2024 [4]	Young male	Trauma	Brachiocephalic artery and esophageal compression; no torticollis reported	Open reduction and wire cerclage	Good post-operative outcome
Present case	16-year-old boy	Kabaddi tackle	Acute torticollis with left SCJ tenderness	Closed reduction under fluoroscopy	Full ROM; returned to sports; 2-year symptom-free follow-up

SCJ: Sternoclavicular joint, ROM: Range of motion, GA: General anesthesia

clavicle shortened the ipsilateral SCM's effective resting length by reducing the distance between its clavicular attachment and the mastoid process [15, 16]. This may have reduced ipsilateral SCM tension, allowing the relatively normal contralateral SCM to predominate and produce the observed contralateral head tilt. This mechanism remains hypothetical and requires biomechanical validation, but it provides a plausible explanation for the unusual postural presentation.

This case highlights the importance of including posterior SCJ dislocation in the differential diagnosis of acute post-traumatic torticollis, particularly in young athletes. CT angiography and multidisciplinary preparation are important because reduction may endanger adjacent vascular structures. In a stable patient without vascular compromise, a carefully planned attempt at closed reduction can be successful even several days after injury.

Conclusion

Posterior SCJ dislocation can rarely manifest as acute torticollis. Recognition of this atypical presentation should prompt appropriate cross-sectional imaging and assessment for mediastinal injury. In stable patients without vascular compromise, carefully planned closed reduction can provide excellent functional recovery, even after a short delay.

Clinical Message

Posterior SCJ dislocation should be considered in acute post-traumatic torticollis, particularly in young athletes. CT angiography and multidisciplinary planning facilitate safe diagnosis and reduction.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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