

SURGICAL TREATMENT OF DORSAL SCAPULAR LUXATION IN TWO CATS

Mehmet SAĞLAM^{1*}, Abdurrahim FADIL¹, Soner ÇAĞATAY², Mehmet PİLLİ²

¹ Ankara University Faculty of Veterinary Medicine Department of Surgery, Ankara, Turkey.

² Near East University Faculty of Veterinary Medicine Department of Surgery, Lefkosa, Turkish Republic of Northern Cyprus.

Abstract

Scapular luxation observed in small animals is caused by trauma induced due to rupture of the muscles which connects the scapula to the thoracic wall (m. serratus ventralis, m. trapezius ve m. rhomboideus) and as a result, dorsal dislocation of the scapula occurs. This rare type of luxation is more common in cats compared to dogs. The aim of this study is to present the results of long-term follow-up of surgically treated dorsal scapular luxation in two cats. Stabilization with a wire in addition to reattaching the muscles' torn was chosen in case 1, but only reattaching the muscles' torn was performed in case 2. Although there was no intra or post-operative complication in case 2, iatrogenic pneumothorax was occurred in case 1 during the wire application and thoracocentesis was performed following the repairing of the related intercostal muscles. Both cases were followed 6 months post-operatively and no recurrence were observed within the follow-up period. In conclusion, open reduction and internal fixation via a wire has good results, but also only reattaching the muscles' torn may be enough in cats for the treatment of dorsal scapular luxation.

Key words: *Cat, dorsal luxation, internal fixation, scapula.*

Introduction

Scapular luxation observed in small animals is caused by trauma induced due to rupture of the muscles connecting the scapula to the thoracic wall (m. serratus ventralis, m. trapezius ve m. rhomboideus) and results in dorsal dislocation of the scapula. This rare type of luxation is more common in cats compared to dogs. Scapular luxation may be accompanied by costa fracture, pneumothorax, brachial flexor injury and pulmonary contusion (2,4). Clinically, the lameness occurs during the acute phase of the lesion. The dorsal subluxation of scapula is generally occurs after jumping, falling or bite wounds directly. The subluxation is diagnosed radiologically and clinically by the movement of scapula towards dorsal during stepping (3,5).

Treatment of the scapular luxation is mostly surgical, but closed reduction with a Velpeau bandage may be a treatment choice in acute cases. In open reduction muscles' torn is reattached to the scapula, however this may not be provide enough stabilization. Generally, stabilization with a wire to the adjacent costa should be performed to provide a normal weight bearing (1, 6).

Materials and Methods

Two male domestic short hair cat, 3 (case 1) and 2 (case 2) years old respectively were admitted to the Surgery Clinic of Ankara University Faculty of Veterinary Medicine Animal Hospital, with a history of partial weight bearing left forelimb. Etiology of the case 1 was unknown, but in case 2 the complainings were occurred after a dog attacked. In clinical examination, it has been observed that the left scapula was luxated dorsally by the time of stepping and there was no pain by palpation in both cases (Figure 1).



Figure 1. Clinical examination of the dorsal scapular luxation (case 2)

The luxation of the scapula was confirmed radiographically (Figure 2)

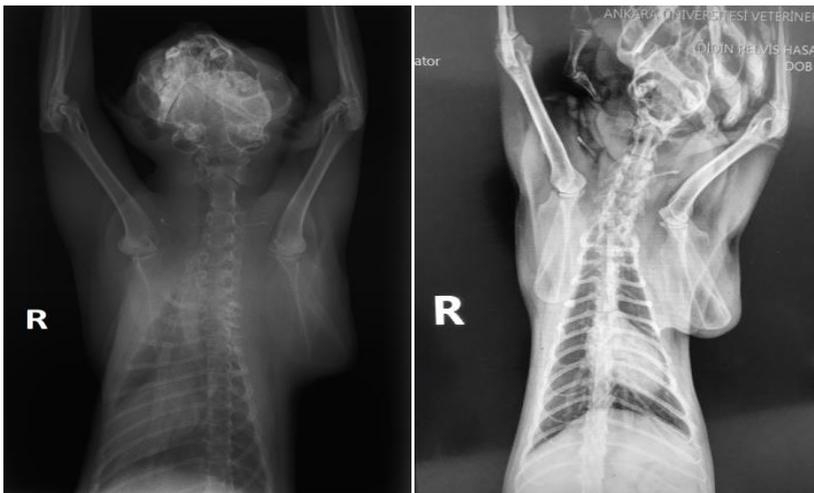


Figure 2. Radiological examination of the dorsal scapular luxation (case 1 and case 2)

Except for the scapular luxation there was no other pathology detected radiographically and clinically. Surgical treatment was chosen in both cases.

General anesthesia protocol of the cases: Induction of general anesthesia 4 mg/kg intravenous propofol (Pofol® 1%, Fresenius Kabi, Germany), and maintenance is done with (Isoflurane®, Eczacıbaşı-Baxter, Turkey) and oxygen mixture. Preoperative analgesia was ensured with morphine HCl (Morfin 0.01g, Osel, Turkey) 0.1 mg/kg SC. Operation area was prepared aseptically in a routine manner.

For approaching the area, caudal corner of the scapula was exposed by dissection of m. infraspinatus and m.teres major muscles. In case 1, after reaching the area, two holes were opened to the left scapula by one cm intervals via a drill and cerclage wire was passed through the first hole and around the sixth costa, then the wire was passed through the second hole and tightened (Figure 3).

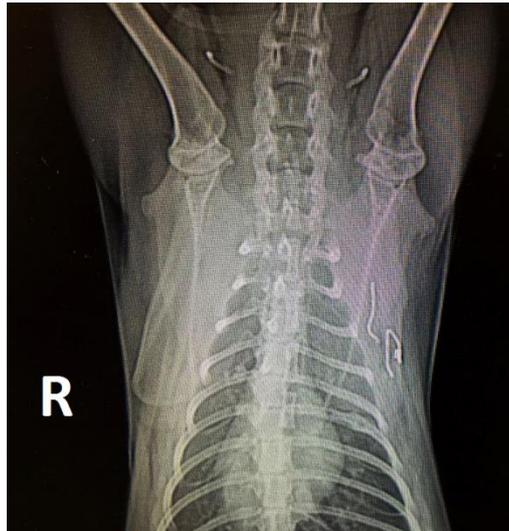


Figure 3. Control radiography 14 days after the operation (case 1)



Figure 4. Clinical control taken 14 days after the operation (case 2)

The m. rhomboideus and trapezius were sutured with absorbable material near the insertion at scapula but m. serratus ventralis could not be sutured. Iatrogenic pneumothorax was occurred during application of the cerclage wire, after repairing the related intercostal muscles thoracocentesis was performed. Later, the area was closed routinely. In case 2, rupture of the ventral serratus and rhomboid muscles were determined by intraoperative examination. The trapezius muscle was undamaged. The proximal end of the ventral serratus muscle were located the ruptured section of the ventral serratus muscle was pulled across the lateral surface of the scapula and sutured to the supraspinatus and infraspinatus muscles using the mattress suture technique with a 2/0 polypropylene. Velpau bandage was applied to the cases for two weeks. By the end of two weeks, bandage was removed and movement limitation was suggested.

Results and Discussion

In postoperative radiographs of case 1, there was no sign of pneumothorax and also there was no other complication within the 6 months follow up. According to the information obtained from the patient's owner, the cat could use its extremity very comfortably even shortly after the operation, it has been found that there is no lameness, except mild abnormal posture of the left forelimb at the 6th month examination of the cat. In case 2, after removing the

bandage normal weight bearing gait was observed and there was no abnormal posture (Figure 4).

Although it has been emphasized that; in cats with acute cases of scapular luxation, closed reduction and Velpau bandage were shown to be effective, in most of the chronic cases it was suggested to perform open reduction and internal fixation with wire (1, 2). However, our cases were chronic and surgical treatment was chosen. In case 1, fixation with wire and suturing the muscles' torn was preferred because the cat was overweight and the suspicion of failure of the suturing the muscles alone. In post-operative physical examinations, the patient could even use the related extremity after a very short time (two-weeks post-operative) in both cases. Also in case 2, only reattaching the muscles' torn was chosen, however the results were favorable and there was no recurrence within 6 months follow-up period.

In conclusion, open reduction and internal fixation via a wire has good results, but also only reattaching the muscles' torn may be enough in cats for the treatment of dorsal scapular luxation.

References

1. **Fossum TW, Hedlund CS (2003)**. Gastric and intestinal surgery. *Veterinary Clinics: Small Animal Practice*, 33(5), 1246-1247.
2. **Harles C, Newton D (2016)**: *Chapter 20 fractures of the scapula*. <http://cal.vet.upenn.edu/projects> Erişim Tarihi: 15.09.2016.
3. **Kano WT, Rahal SC, Mesquita LR, Faria LG (2013)**: *Gait analysis in a cat with scapular luxation and contralateral forelimb amputation*. *Can Vet J*, 54, 990-991.
4. **Özer K, Karabağlı M, Ömer H, Demir ME (2017)**: *Surgical treatment of dorsal scapular luxation in cats: 6 cases (2010-2016)*. *Kafkas Univ Vet Fak Derg*, DOI: 10.9775/kvfd.2016.17007.
5. **Özsoy S, Güzel Ö (2013)**: *Dorsal luksasyon of the scapula in a cat*. *Turk J Vet Anim Sci*, 37: 618-620.
6. **Piermattei DL, Flo GL, Decamp CE (2006)**: *Fractures of scapula*. 255-261. In: *Hand book of small animal orthopedics and fracture repair*, St Louis.