

INFERIOR DISLOCATION OF THE SHOULDER COMPLICATED WITH BRACHIAL PLEXUS PALSY: A CASE REPORT

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ABSTRACT

Erecta dislocation or lower glenohumeral dislocation is a rare form of shoulder dislocation, Neurovascular complications are particularly common in this type of dislocation due to the significant displacement of the humeral head and the severity of the causal trauma. We report a case of Erecta dislocation complicated by brachial plexus paralysis in a 55-year-old woman managed conservatively. The patient underwent closed reduction under general anesthesia. Neurological Recovery took 10 months. At 1 year follow-up the functional result was satisfactory.

KEYWORDS: Shoulder – inferior –dislocation- Brachial plexus.

INTRODUCTION

Erecta dislocation or lower glenohumeral dislocation is a rare form of shoulder dislocation, especially in young patients.^[1] Neurovascular complications are particularly common in this type of dislocation due to the significant displacement of the humeral head and the severity of the causal trauma.

We report a case of Erecta dislocation complicated by brachial plexus paralysis in a 55-year-old woman with shoulder trauma with a review of the literature highlighting the severity of these injuries.

CASE REPORT

This is a 55-year-old patient, right-handed with no pathological history, admitted to the emergency room for a closed trauma of the right shoulder following a direct trauma (fall on the shoulder stump) responsible for pain with total functional impotence of the right upper limb.

Clinical examination finds a right shoulder blocked in abduction and supported by the healthy limb. The attempt to mobilize is very painful. The neurovascular exam revealed a loss of sensitivity and motor skills of the entire limb.

Conventional radiography **showed** a lower glenohumeral dislocation (Erecta) without associated fracture. (Figure 1)

The patient was admitted urgently (at H3 of trauma) to the operating room where a reduction of the dislocation under general anaesthesia was performed followed by immobilization with a postural splint. Post-reduction neurological examination showed persistent upper limb paralysis. An X-ray check was performed confirming the reduction of the dislocation. (Figure 2)

After 3 weeks, Physiotherapy was started involving passive mobilization of the shoulder, elbow and wrist joints and electrical stimulation.

Electroneuromyography at the 6th objective week post-ganglionic right brachial plexus injury.

The physiotherapy was continued with monthly clinical follow-up. At 4 months, the patient had started to recover finger and wrist flexion.

At the 12-month follow-up, the patient had recovered active flexion and extension of the fingers and wrist, and active flexion and extension of the elbow. In the shoulder area, there was still a slight limitation of the range of motion.



Figure 1: X-ray displaying the inferior dislocation of the shoulder.



Figure 2: X-ray after the reduction was achieved.

DISCUSSION

Shoulder dislocation in its erecta form is a rare entity, accounting for only 0.5% of all dislocations in l'épaule.^[2,3] It is a dislocation of the head in the inferior position. The mechanism is an hyperabduction that brings the humeral neck into contact with the acromion, which serves as a lever for the humerus axis.^[4] It is frequently accompanied by severe capsular and labroligamentous lesions, which explains the high recurrence

rate and the frequent evolution towards chronic instability of the shoulder.

Erecta dislocation is accompanied in about 60% of cases by damage to the brachial plexus, most often involving the axillary nerve.^[5] but the lesions may also be combined.^[6] They are more likely to occur in people over 50 years of age.^[7] In the vast majority of cases, the nerve injury is neurapraxia which resolves spontaneously after a variable period of time (sometimes 18 months to 2 years).^[8]

Electromyography (EMG) is not indicated immediately and follow-up is clinical only. If the neurological disorders persist at 6 weeks after the trauma, an EMG test is indicated.^[9] There is no indication for emergency surgical exploration, as most lesions have a good prognosis and evolve favourably towards complete recovery, first sensory and then motor.^[10]

The absence of clinical or electrophysiological evidence of recovery beyond 3 to 6 months justifies surgical exploration for neurolysis, and possibly direct nerve repair, nerve grafting or nerve transfer (neurotization).^[11] Early intervention is extremely important in obtaining a good result. The optimal time of nerve reconstruction is regarded as 3 to 6 months after injury.^[12] Palliative surgery is indicated when the time limits for nerve surgery are exceeded or after failure of the surgery. The objective is to restore or improve the function of the elbow, but also of the shoulder and hand through various surgical procedures: tendon transfers, arthrodesis and tenodesis.^[13]

CONCLUSION

Erecta dislocation is a rare entity with frequent neurological complications requiring careful neurological examination before and after reduction. The prognosis is generally favourable. Spontaneous recovery is the rule.

REFERENCES

1. GI. Groh, MA. Wirth, CA. Rockwood. Results of treatment of luxation Erecta (inferior shoulder dislocation) *Journal of Shoulder and Elbow Surgery*, 2010; 19: 423-426
2. Tsuchiday T, Yaney K, Kimura Y. Luxation event of bilateral shoulders. *J Shoulder Elbow Surg*, 2001; 10(1): 595-7.
3. Yamamoto T, Yoshiya K, Kurosaka T. Luxatio erecta: a report of five cases and reviews of literature. *Am J Orthop*, 2003; 32(1): 601-3.
4. F.Z. Dahmi, M. Moujtahid, Y. El Andaloussi *, Y. Bekkali, T. Zaouari, M. Nechad, M. Ouarab. Luxation erecta de l'épaule (à propos de huit cas). *Chirurgie de la main*, 2008; 27: 167-170.
5. Yanturali, S., Aksay, E., Holliman, C. J., Duman, O., & Ozen, Y. K. Luxatio erecta: Clinical presentation and management in the Emergency Department. *The Journal of Emergency Medicine*, 2005; 29(1): 85-89.
6. A Atef A El-Tantawy, H. Gad, M. Hefeda Prevalence of associated injuries after anterior shoulder dislocation: a prospective study. *Int Orthop*, 2016; (40).
7. Pasila M, Jaroma H, Kiviluoto O, Sundholm A. Early complications of primary shoulder dislocations. *Acta Orthop Scand*, 1978; 49: 260-263.
8. Oberlin, C., Belkheyar, Z., & Durand, S. Paralysies traumatiques du plexus brachial de l'adulte par

lésions radiculaires. *EMC - Appareil Locomoteur*, 2007; 2(2): 1-11.

9. M. Öztürk, G. Cunningham, N. Holzer. Prise en charge d'un premier épisode de luxation antéro-inférieure de l'épaule chez l'athlète. *Rev Med Suisse*, 2018; 14: 1326-1331.
10. Saab.M. Brachial plexus lesion following an anterior dislocation of the shoulder. *European Journal of Emergency Medicine*, 2004; 11(3): 168-169.
11. Ameh, V., & Crane, S. Nerve injury following shoulder dislocation: the emergency physician ??s perspective. *European Journal of Emergency Medicine*, 2006; 13(4): 233-235.
12. Mamane W., Masméjean. E. Paralysie traumatique du plexus brachial de l'adulte : Prise en charge chirurgicale initiale. In : *Plexus brachial Actualités et perspectives*, 2012.
13. Ph. Valenti, A. Kilinc. Chirurgie palliative dans les séquelles de lésions du plexus brachial chez l'adulte. *Plexus brachial Actualités et perspectives*, 2012.
14. HR.Park, GS. Lee, IS.Kim, JC.Chang.Brachial Plexus Injury in Adults *The Nerve*, 2017; 3(1): 1-11.