

Case Report: Glenohumeral Dysplasia, A Complication of Obstetrics Brachial Plexus Palsy

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Abstract:- This case report analyses on Obstetrics brachial plexus palsy (OBPP) which is rare disorder in childhood and can lead to serious problems in early life of a child. This case report was done in Maharishi Markandeshwar Institute of Medical Science and Research Ambala Mullana in Orthopaedic OPD where a female child of age 2 years came with complaints of restriction of right shoulder external rotation and elbow in flexion position, the patient was examined clinically and radiologically and found to have this rare disease. Patient's attendants had been explained about all the prognosis of treatment which can be done. Patient was followed up in OPD every week and treated for same. This case report is rare as seen in previous studies.

I. INTRODUCTION

Obstetrics brachial plexus palsy (OBPP) can occur in 1.5 to 5.1 in every 1000 births. OBPP is a self-limiting condition with high spontaneous recovery rate. Untreated OBPP can result in Glenohumeral dysplasia (GHD) which is very uncommon sequelae. OBPP can develop maladaptive shoulder joint pathology over the time. The muscle imbalance leads to overpower of internal rotators over external rotators and results in an internal rotation contracture. This consistent internal rotation for a prolonged period can develop a GHD. We report a patient with OBPP from brachial plexus injury during birth developed glenohumeral dysplasia.

II. CASE REPORT

A 2-year-old female child present with right shoulder internal rotation contracture (Figure 1). The patient had a history of Obstetrics brachial plexus injury. Physical examination revealed restriction of right shoulder external rotation and elbow in flexion position. MRI of right shoulder revealed mildly flattened humeral head, concave glenoid surface and posterior subluxation of the humeral head. The glenoid cavity is convex and retroverted with glenoid version angle of 8 degree. There is hypertrophy of the labrum more marked posteriorly. Rotator cuff muscles reduced in bulk. Patient have been diagnosed with GHD based on MRI findings.

III. DISCUSSION

Glenohumeral dysplasia is a set of secondary changes of the glenohumeral joint due to OBPP. OBPP clinical manifestations are based on the extent of nerves injury. According to Narakas classification, in type 1 involves C5

and C6 nerve deficits, in type 2 injury extended to C7/C8 nerve, in type 3 whole brachial plexus involved, and type 4 whole brachial plexus injured and associated with Horner syndrome. Several studies have been hypothesized that there is a correlation between shoulder internal rotation contractures and GHD development due excessive stress on both the humeral head and glenoid as they grow. However, other studies have found that besides internal rotation contractures there are other factors that can contribute to GHD, such as degree of external rotation.

MRI is the most commonly used imaging modality for the diagnosis of GHD. The commonly find deformities are retroversion of the glenoid cavity, delayed development of the humeral head, and posterior translation of the humeral head. In our patient MRI of right shoulder revealed mildly flattened humeral head, concave glenoid surface and posterior subluxation of the humeral head. Atrophy of rotator cuff muscles have been documented in GHD patients. In our patient atrophy of rotator cuff muscles have been noticed in MRI.

The implications of Musculoskeletal dysplasia from OBPP can be permanent even in the setting of spontaneous nerve recovery or successful nerve reconstruction or might needed secondary reconstruction when become older. Initially patients are treated with physiotherapy such as stretches to prevent shoulder internal rotation contractures.

IV. CONCLUSION

Glenohumeral dysplasia can occur early in OBPP without loss of any shoulder range of motion. Predictors include increasing age and factors related to muscular imbalance. GHD likely affects the functional outcome that may be achieved with nerve reconstruction, and early screening may improve outcomes

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Image 1: Clinical picture of patient showing painful ROM



Image 2: Clinical picture showing deformity



Image 3: X-Ray shoulder AP view



Image 4: X-Ray right elbow with arm and forearm AP/Lateral view

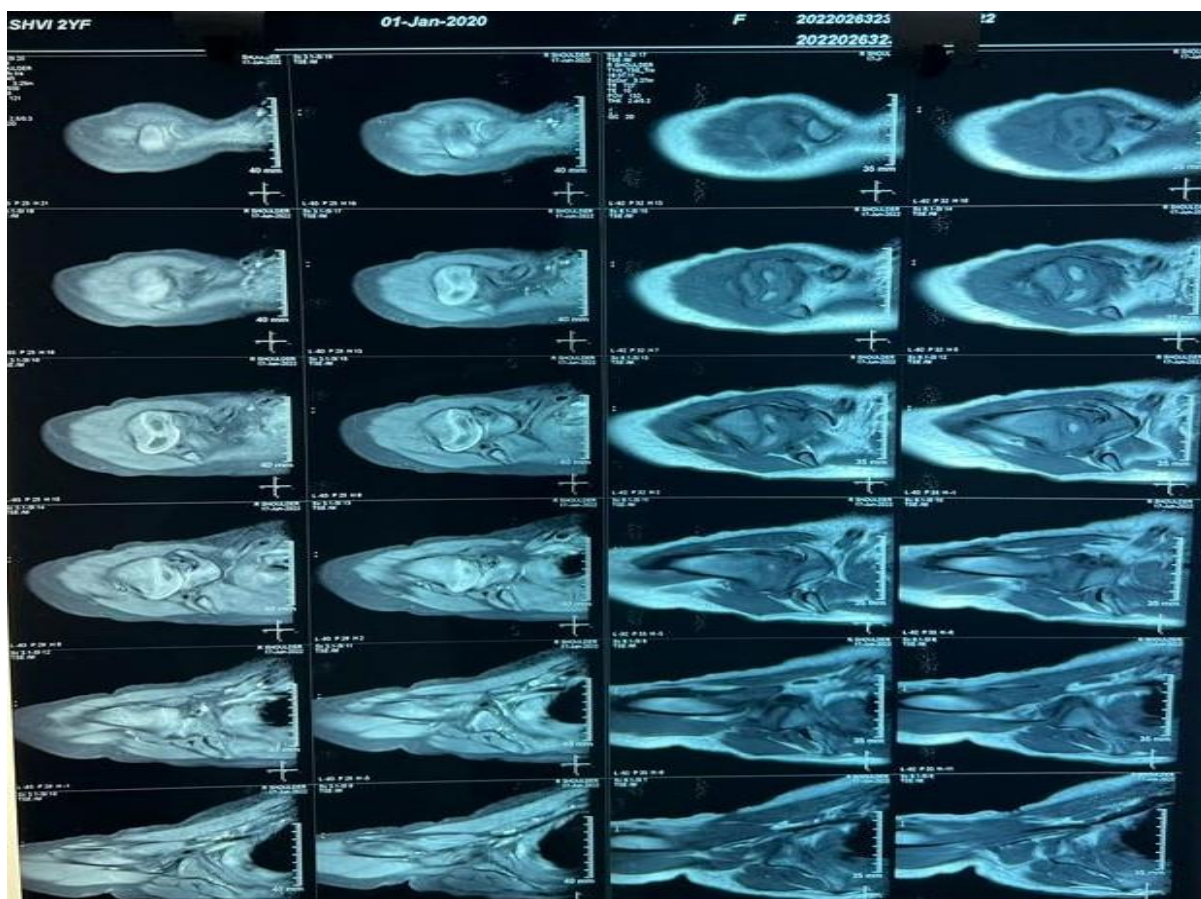


Image 5: MRI right shoulder axial section

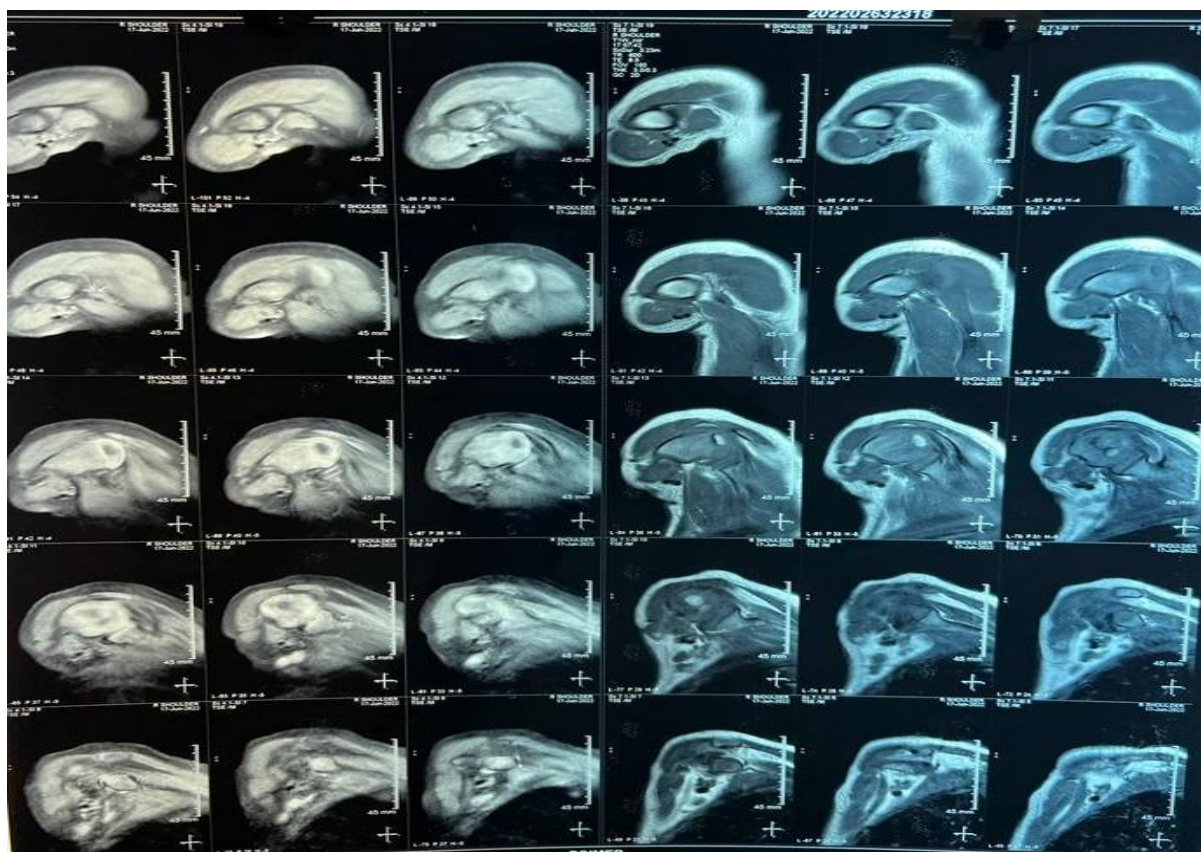


Image 6: MRI film coronal view

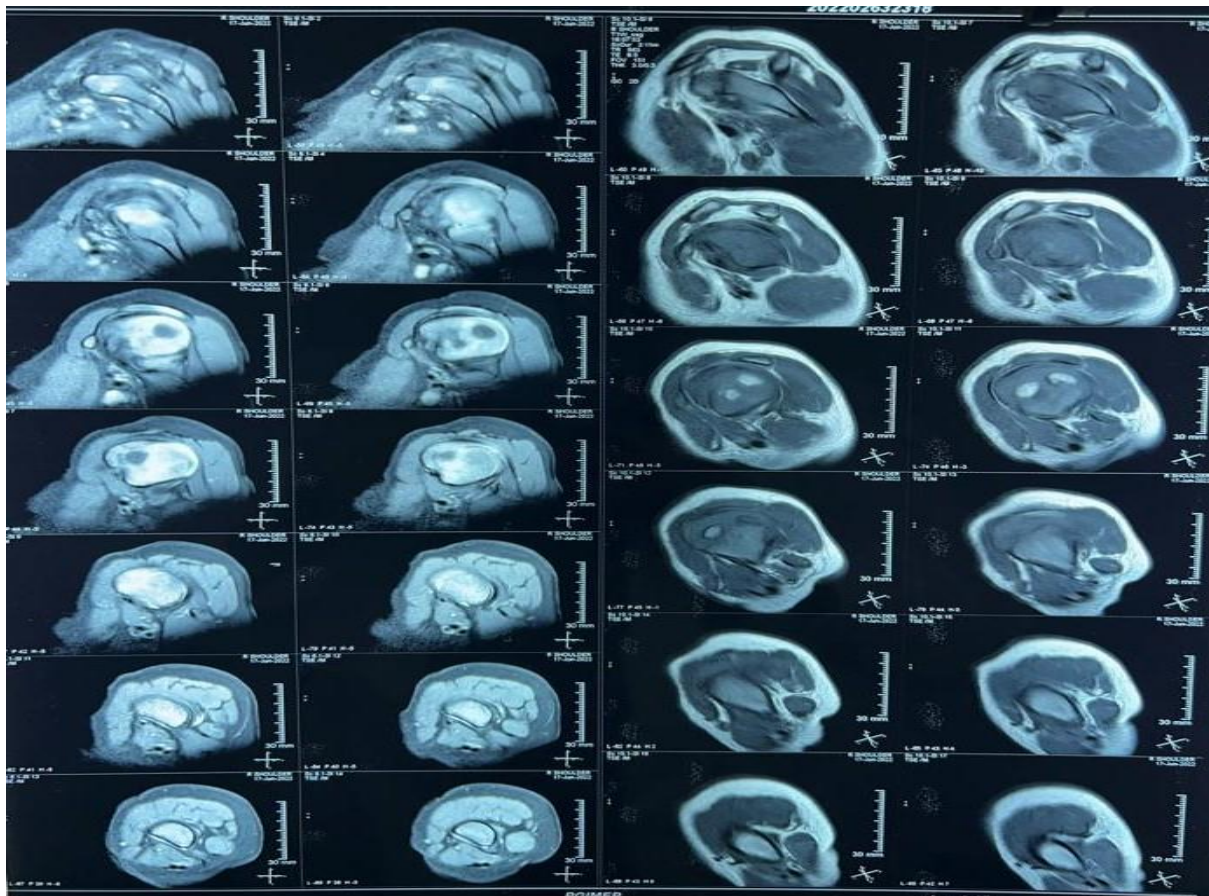


Image 7: MRI film sagittal view