

Acromial hyperplasia, the sequel of deltoid contracture: A case report

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INTRODUCTION

The major complications of deltoid contracture frequently encountered are abduction contracture, winging of the scapula, humeral head flattening and shoulder dislocation (Bhattacharyya 1966; Chatterjee and Gupta 1983). To our knowledge acromium hyperplasia has not been a reported complication of deltoid contracture in the English-language literature. We encountered a patient who had bilateral acromium hyperplasia that appeared to be secondary to deltoid muscle contracture due to large volumes of fluid injected intramuscularly as a child.

CASE REPORT

A 29 year-old male manual laborer was suffering from tightness over the anteriolateral aspect of both shoulders. The symptoms had been present since childhood, but he noticed increased bilateral shoulder pain and soreness of approximately 3 months duration. The pain woke him up during the night and was worse with activity. Nothing he did seemed to relieve the symptoms. There was no history of trauma, but his

parents remembered that he received many intramuscular injections into each deltoid muscle since childhood. But they did not know which drugs were injected and there were no old records to confirm which drugs were administered.

On examination, he was found to have bilateral anteriolateral deltoid atrophy with drooping of both shoulders. Inability to bring the arms down to the side of the body and winging of the scapulae were also noted (Fig.1).

Both of his shoulders had normal internal and external rotation. His right shoulder adduction was limited to -25° (i.e. 25° of abduction contracture), forward flexion to 100° and abduction to 110° . Left shoulder adduction was limited to -20° , flexion to 110° and abduction to 120° . He had normal sensation without tingling or numbness and bilateral marked tenderness over the acromiums and the deltoid insertion areas. He had no pain with passive range of motion but had the above limitations.

Roentgenograms of both shoulders revealed enlarged acromiums that covered the humeral heads. There was also bilateral flattening of the humeral heads (Fig. 2).

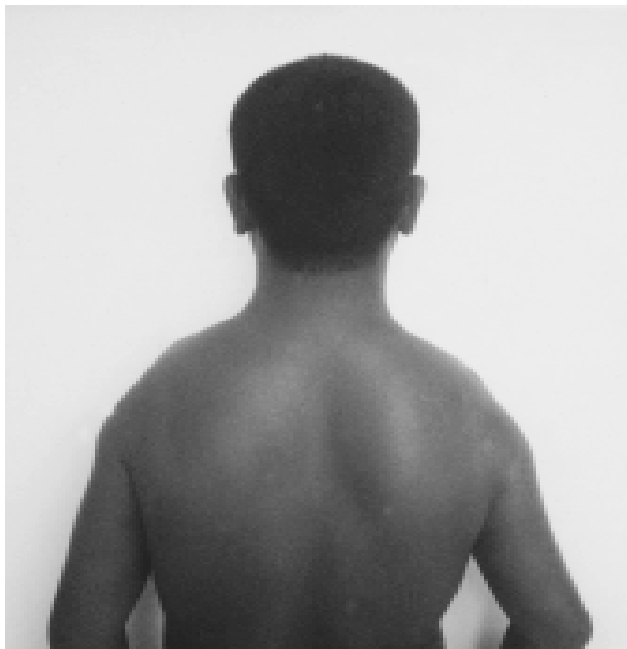


Figure 1 Drooping of both shoulders, inability to bring the arms down to the sides of the body and winging of the scapulae.

A longitudinal incision over the anteriolateral aspect of the acromial process was made. The incision proceeded downward approximately 70mm to expose the acromial process and the fibrotic deltoid muscle. The acromial process was found to be enlarged both anteriorly and laterally. A patch of fibrotic tissue size 3cm x 4cm was found over the intermediate part of the deltoid muscle just around the insertion area of the enlarged acromial process. The deltoid insertion was detached over the anteriolateral part of the acromium. Then acromioplasty was done as shown in the diagram (Fig. 3). After the acromioplasty, we identified the fibrotic bands and resected them. Then we made a V-Y plasty of the deltoid muscle, several drill holes into the acromium and reattached the muscle. We closed the incision layer by layer and splinted the shoulder for three days.

Gentle passive range of motion was then started and continued for one month. Isometric muscle exercises and active range of motion were then added. Stretching range of motion exercises were started two months after the operation. Approximately twelve months postoperatively the patient regained almost a full range of motion and usage of his right shoulder. Winging of the scapula also disappeared. His right shoulder soreness subsided and he continued to be painfree.

The same procedure was done on the left side with the same results.



Figure 2 Preoperative roentgenogram of left shoulder revealed enlarged acromion and flattening of humeral head.

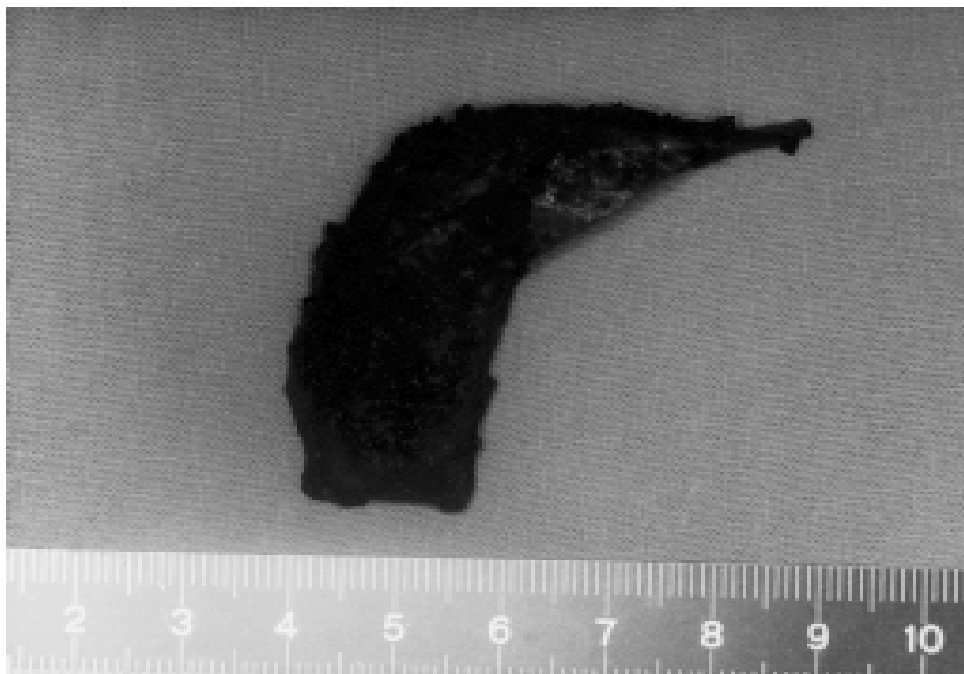


Figure 3 Acromioplasty, the resected area of acromion is marked by 'A'. The inset shows the resected acromion.

DISCUSSION

There appear to be two causes of deltoid muscle contractures: (1) congenital (Chiari et al 1983) and (2) intramuscular injections of the deltoid muscle (Groves and Goldner 1974; Cozen 1977). Of these two causes, the most frequent cause is relatively large volumes of fluid being injected intramuscularly into the deltoid muscle. We postulate that our patient's deltoid contracture was secondary to large volumes of fluid being administered intramuscularly as a child.

There are many reported complications of deltoid contractures (Bhattacharyya 1966; Chatterjee and Gupta 1983). Some of these complications are abduction contracture, winging of the scapula,

humeral head flattening, and even shoulder dislocation. We found no reported cases of acromium hyperplasia due to deltoid muscle contracture.

We postulate that as our patient was growing, the contractures created a pulling force on his acromial processes causing them to enlarge anteriolaterally. This diminished his range of motion and created his disability. Besides the classical clinical manifestation of abduction contracture and winging of the scapulae, there was also limitation of forward flexion and abduction which was caused by blockage of the enlarged acromial processes. After releasing the contractures and removing some of the excess acromiums our patient regained full usage of his shoulders and continues to be painfree.

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