



## Idiopathic bilateral gluteus maximus contracture : A case report and review of literature

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**Bilateral gluteus maximus contracture is an infrequently reported clinical entity. There are only two case reports from the Indian subcontinent. We report a case of idiopathic bilateral gluteus maximus contracture in a 14-year-old girl.**

**Keywords :** gluteus maximus ; contracture ; idiopathic.

### CASE REPORT

A 14-year old female presented to the orthopaedics outpatient department with complain of inability to squat and painless awkward gait. No history of repeated intramuscular injections in the buttocks was forthcoming, despite repeated questioning.

On examination, the girl walked with both her limbs in mild abduction. On attempting to sit or squat, she could only flex her hips in abduction and assumed a 'frog like position' (fig 1). The hip joints were non-tender. There was a visible groove bilaterally in the buttock area overlying the gluteus maximus muscle, which got accentuated on attempted flexion of the hip. On flexion of the hip at 30° the knee was going to the ipsilateral axilla. However the hip joint could be flexed to 130° in wide abduction. The arc of abduction was 20°-45°. Hip rotations were full and free.

There was no symmetrical or asymmetrical loss of muscle power in the lower limbs. There were no other associated contractures of deltoid or quadri-

ceps muscles. The spine was normal. She was diagnosed as having asymptomatic ventricular septal defect (VSD) on routine cardiac examination. Her radiographs of the pelvis with both hips were normal. Thus, a diagnosis of idiopathic bilateral gluteus maximus contracture was made.

The patient underwent surgical release of the contracture. In the lateral position an incision was made over the visible groove in the buttock, overlying the gluteus maximus muscle and curved gently downward over the posterior aspect of the greater trochanter, extending 5 cm below it. There were numerous fibrous septae arising from the skin, extending into the adipose tissue and reaching up to the gluteal fascia. The septae were released and the gluteal fascia was reached. There was a fibrotic band extending from the gluteal fascia into the gluteus maximus muscle in the postero- inferior

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*Fig. 1.* — Pre-operative clinical picture of the patient assuming a 'frog like position' on attempted squatting.



*Fig. 2.* — The patient could flex her hip beyond 90° without axis deviation following surgery on the right side.



*Fig. 3.* — The patient is able to squat comfortably following bilateral gluteal soft-tissue release.

part of the muscle, extending up to the inferior aspect of the gluteus maximus attachment to the tensor fascia lata. Division of the band and excision of the fibrotic mass was accomplished after visualisation of the sciatic nerve. The short external rotators were not contracted. Full flexion and abduction of the hip could be achieved intraoperatively.

Postoperatively no traction or immobilisation was required and hip flexion was encouraged. Within three weeks of surgery, hip flexion without axis deviation was achieved on the operated side (fig 2). She subsequently underwent similar surgery on the other side. She could squat and sit cross-legged within six weeks of the second surgery (fig 3).

## DISCUSSION

Reports of fibrosis of the gluteus maximus are sparse in literature. Other muscles involved are quadriceps, triceps, deltoid and biceps femoris.

The aetiology of fibrosis of the gluteus maximus is obscure. Congenital muscular dysplasia is postulated (3). A genetic predisposition is also suggested by Gao (1). Most commonly acquired muscle contractures are seen secondary to repeated intra-muscular injections, with quadriceps fibrosis being more common than gluteal fibrosis. However no such history was forthcoming in our case despite our repeated questioning of the parents. The possibility of repeated intramuscular injections as aetiology can still not be ruled out in this case. None of the family members had similar complaints. Gao has proposed the term 'idiopathic contracture of gluteus maximus' to differentiate from cases occurring secondary to definite causes like poliomyelitis or infection (1).

Flexion of the hip was possible only in wide abduction. A contracted gluteus maximus muscle pulls the iliotibial band posteriorly and acts as a checkrein (2). The gluteus maximus being a hip extensor and external rotator, the contracted muscle fascia unit interferes with flexion. Due to a fixed muscle length phenomenon, flexion could be achieved by external rotation (contracted gluteus maximus) and abduction (pull on iliotibial band). On abduction the contracted band was no longer the arc of flexion so, further flexion was possible only in wide abduction (frog leg position).

The presence of a depressed groove over the buttock running along the course of gluteus maximus has been documented in the literature (2, 4). On exploration numerous septae were found running from the skin to the fascia. Full correction could not be achieved before their release. Similar findings have been made by Hang, Sacristan *et al* and Gao (1, 2, 4). Gao emphasised that the contracture band is located in the antero-inferior part of the gluteus maximus muscle (1). However in our case the entire inferior portion of the gluteus maximus muscle and its insertion over the iliotibial band over the greater trochanter was involved. The short external rotators were spared. Excision of the fibrous tissue in the inferior part of gluteus maximus and transverse division of part of the iliotibial band over the greater trochanter could correct the deformity.

## REFERENCES

1. **Gao GX.** Idiopathic contracture of the gluteus maximus muscle in children. *Arch Orthop Trauma Surg* 1988 ; 107 : 277-279.
2. **Hang YS.** Contracture of the hip secondary to fibrosis of the gluteus maximus muscle. *J Bone Joint Surg* 1979 ; 61-A : 52-55.
3. **Piero A, Fernandez CI, Gomar F.** Gluteal fibrosis. *J Bone Joint Surg* 1975 ; 57-A : 978-990.
4. **Sacristan HD, Barba AS, Stern LLD, Martin JM, Linan C, Ferrandez L.** Fibrosis of the gluteal muscles. *J Bone Joint Surg* 1974 ; 56-A : 1510-1512.