Editorial Review on: Excellent Outcome with Modified Thompson Quadricepsplasty for Knee Extension Contracture: Case Report and Review of the Literature

Extension contracture of the knee is becoming an uncommon problem in our modern orthopedic practice. The improvement of fracture fixation methods and implants and the concept of early mobilization of the knee after fracture fixation have improved the outcome of these fractures and reduced the risk of contractures. Early rehabilitation with protected weight bearing to regain the range of movement of the knee joint is the key point to prevent extension contractures.[1]

The early surgical intervention for the treatment of contractures around the knee has been reported to give a better outcome.[2,3] Manipulation under anesthesia, arthroscopic release and open quadricepsplasty has been reported to work better in the early stages of contractures, as early as 3–9 months, when there is poor progression of the range of movements during rehabilitation after surgery.[2,3]

This article reported a case of modified Thompson's quadricepsplasty for the treatment of knee extension contracture following distal femoral fracture fixation. The results achieved using this method was good and the patient had an active flexion of 120° with no extension lag at 18 months' follow-up. The authors also reported an extensive literature search to review articles that reported similar cases. The results from the literature show good knee function and improvement of flexion after modified Thompson's quadricepsplasty for the treatment of knee contracture.

Thompson quadricepsplasty was reported by Thompson in 1944.[4] Many authors have reported the same procedure with modifications since then. Most recently, authors have reported excellent and good results in their patients treated with this method for knee contractures.[3,5,6]

Birjandinejad *et al.*[3] reported 64 patients underwent modified Thompson's quadricepsplasty for the treatment of knee stiffness due to a traumatic event and failed to improve with physiotherapy. The mean interval between the last surgery and quadricepsplasty was 23 months. The authors reported excellent and good results using Judet criteria in 87% of their patients at a mean follow up of 36 months. A significantly higher flexion degree was achieved in patient who underwent quadricepsplasty in the first 6 months compared to those operated after 6 months. Other favorable factors that produced a significantly higher flexion were when patients had lower preoperative flexion arc, <4 surgeries prior to quadricepsplasty and normal body mass index.

Similarly, Mousavi *et al.*[5] reported 27 patients underwent Thompson's quadricepsplasty for the treatment of knee stiffness following femoral fracture fixation. The authors reported successful results in terms of significant improvement in range of movements at 3 and 6 months post operatively. On the other hand, age and quadriceps time (interval between fracture management and quadricepsplasty) were not found to be statistically significantly related to changes in the range of movements.

Finally, Kundu *et al.*[6] reposted 22 patients underwent Thompson's quadricepsplasty for the treatment of knee extension contracture following distal femoral fracture conservative/surgical treatment. The patients were operated after at least 18 months' following the original injury. The authors reported excellent and good results in 18 patients at follow-up range of 2–5 years.

All the reports in the literature are case series reports of the results of a type of quadricepsplasty, level IV evidence. The literature lacks a good quality randomized controlled trials to compare the results of different methods of quadricepsplasty using a valid outcome measure. Authors reported different mix of populations and used different types of outcome measures, which make comparison difficult. On the other hand, this differences in the population studied might make the generalizability of the results easier. One might conclude that any type of well-performed quadricepsplasty for the treatment of posttraumatic knee contracture will give a good and satisfactory result. In addition, some evidence suggests early intervention will produce better results in comparison to late intervention.

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Conflicts of interest

There are no conflicts of interest.

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