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Spontaneous bilateral quadriceps rupture in a vitiligo patient: A case report

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Abstract
Introduction: Bilateral Spontaneous Quadriceps tendon rupture is a rare occurrence and a few handful cases have been reported in literature worldwide.
Case Presentation: A 57-year-old patient with Vitiligo and on oral steroids falls while trying to get up from a chair and complains of weakness in both knees, unable to get up. Patient was found to have osteo-tendinous rupture of Quadriceps tendon in both knees which occurred spontaneously leading to weakness and fall.
Conclusion: Prompt Orthopaedic attention is required with such conditions instead of giving priority to neurological review and consult for weakness as results are better in early diagnosis & surgery.

Keywords: Bilateral quadriceps, vitiligo, systemic steriods

Introduction
Bilateral Spontaneous Quadriceps Tendon Rupture is a condition causes significant morbidity in patients already besieged with underlying multiple pathological conditions. Though challenging, prompt diagnosis and treatment is necessary for better functional outcomes since bilateral nontraumatic presentation rightly points to a neurological disorder and may lead to delayed orthopaedic consultation.

Case Report
A 57 year old male patient was brought to ER with complaints of inability to stand following a trivial fall while trying to get up from a chair.
Patient was a known case of Vitiligo and was on oral steroids for 10 years and had already undergone internal fixation for fractures of left proximal humerus & right proximal femur within last 6 months.
Clinically there was bilateral mild effusion over proximal pole of patella and tender suprapatellar step. The gap exaggerated on isometric contraction of Quadriceps muscle.
Bilateral active Straight leg test was negative but active flexion was normal.
X-rays appeared to be normal and MRI revealed Bilateral Quadriceps Tendon Rupture.
The patient was taken up for surgery the same day under spinal anaesthesia after usual pre-op evaluation.
Through a midline incision and dissection, the rupture was confirmed at an osteo-tendinous junction along with medial and lateral complete extensor retinacular tear of both knees. Edges of tendon and insertion site over patella were freshened and secured with transosseous tunnel in patella, also the extensor retinaculae was repaired on both knees with vicryl 1-0.
Both Knees were immobilized with a Knee brace for 4 weeks and active knee ROM exercise was started thereafter for the next 4 weeks.
Assisted weight bearing at 8 weeks and full weight bearing without assistance at 12 weeks.
Patient post-op recovery was good with full extension of both knees.

Discussion
Quadriceps tendon is a strong structure weakened by pathological process in predisposed individuals. Patient presents with a triad of knee pain, swelling and suprapatellar step. Complete extensor loss may suggest a concomitant retinacular tear.

Separate studies conducted by Neubauer, *et al.* and Scuderi, *et al.* emphasized-on repair within 2 weeks resulted in better outcomes, [1]. Early diagnosis can be challenging as stated by Neubauer, *et al.* [2].

Patients may be erroneously worked up for other neurological conditions due to bilateral presentation without any trauma.

Eccentric loading of a partially flexed knee is the primary mechanism most of the time, but history of fall and tumbling adds to the confusion.

Therefore, there may be considerable delay before Orthopaedic consultation is sought and treatment plan varies considerably due to retraction and fibrosis of tendon edges on late presentation.

Ever since Steiner and Plamer reported the first case of Bilaterlal Quadriceps tendon rupture in 1949 [3], only few hundred cases have been reported in literature so far.

Arumilli *et al.* reported a case of bilateral simultaneous complete quadriceps tendon rupture in a patient with bilateral enthesopathy of the quadriceps tendon [4]. They believe that chronic enthesopathy of the superior pole of patella and eccentric loading led to Quadriceps Tendon Rupture in their Patient.

Individuals treated with steroids for systemic illness can have a rupture of quadriceps as suggested in a report by Senevirathna, *et al.* [5].

Mostly the condition presents in older individuals having systemic disease like inflammatory arthritis, Ureamia, Diabetes Mellitus, Atherosclerosis, Vasculitis, Hyperparathyroidism etc as stated by Bhole, *et al.* [6].

Isolated cases may present in young healthy bodybuilders/ athletes who abuse anabolic steroids [7].

The mechanism, site and histopathology of tear may vary depending upon coexisting local and systemic factors, patients' age and activity profile.

Athletes and labourers are more susceptible to ruptures. Endothelial swelling with perivascular lymphocytic exudate has been described in patients with arthritis, and perivascular mononuclear cell infiltrate in the perivascular area was observed in a patient with SLE.

In some patients with SLE who are being treated with corticosteroids, tendon rupture has been observed without any inflammatory reactions [8].

Rheumatoid arthritis may cause mid-substance tear due to collagenase activity leading to tendon degeneration [9] but Vasculitis may cause ischemia and degeneration of the tendon leading to rupture.

Various combinations of simultaneous Tendon rupture in the same limb or both limbs can take place

Rogers, *et al.* [10] reported a case of quadriceps tendon rupture with contralateral patellar tendon rupture in a 47 year old healthy man and emphasized the position of the limb and joint during loading and subsequent rupture.

- Delay in diagnosis in 96.4% of the patients due to inconsistency [2].
- Better results if operated within 2 weeks [1].

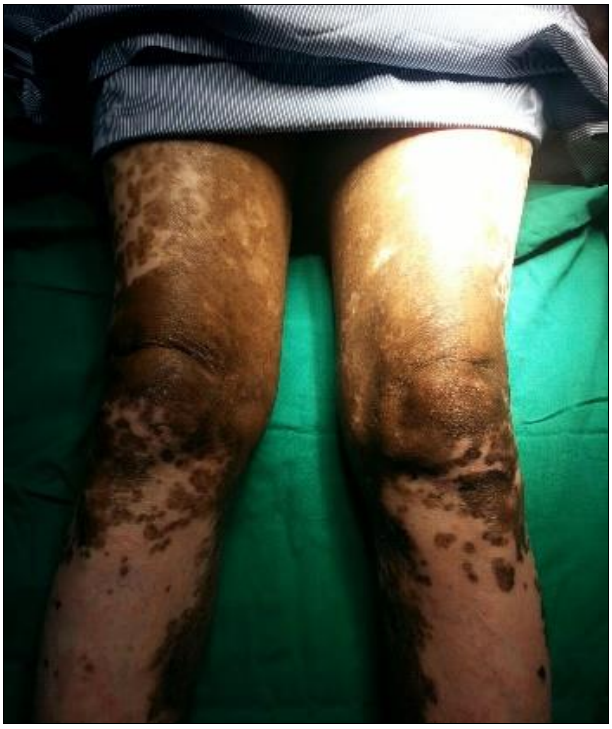

Fig 1: Clinical picture of the right knee showing indentation in suprapatellar region

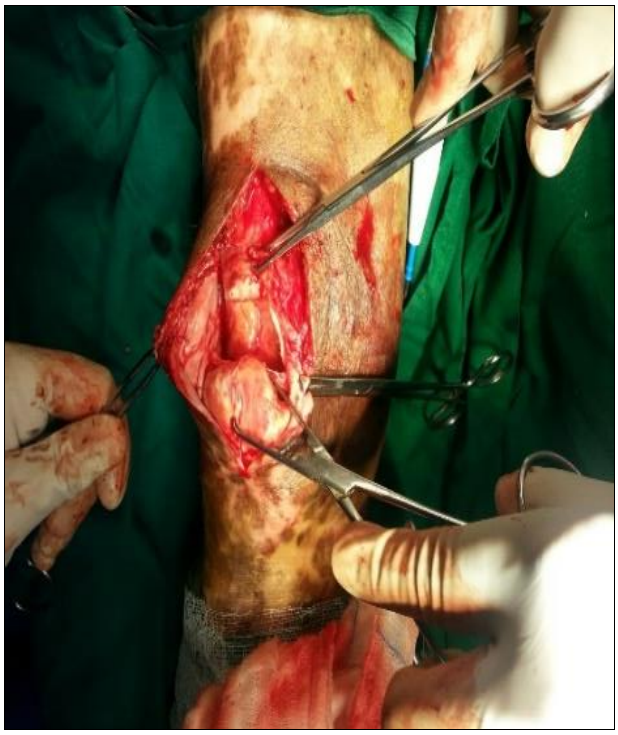

Fig 2: Intraoperative image: rupture of quadriceps tendon at the insertion over the superior pole of patella

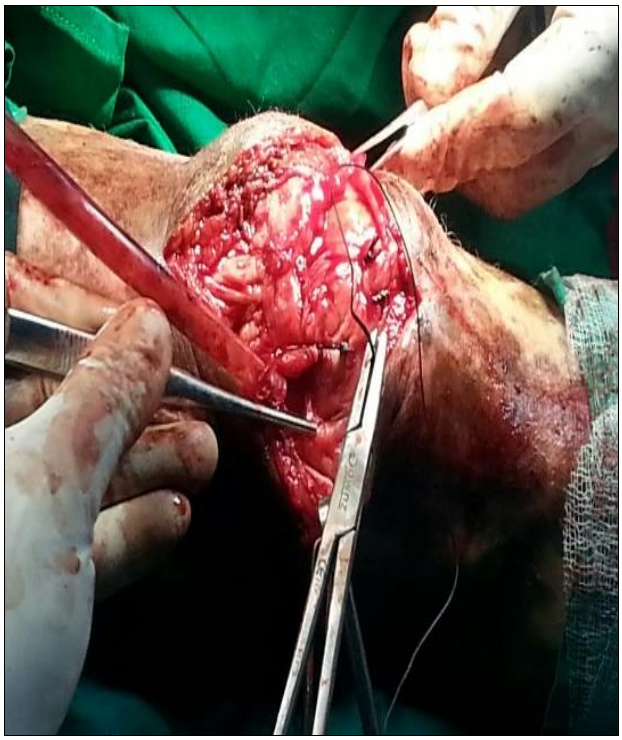

Fig 3: Intraoperative image: Suturing of quadriceps tendon to superior pole of patella with ethibond

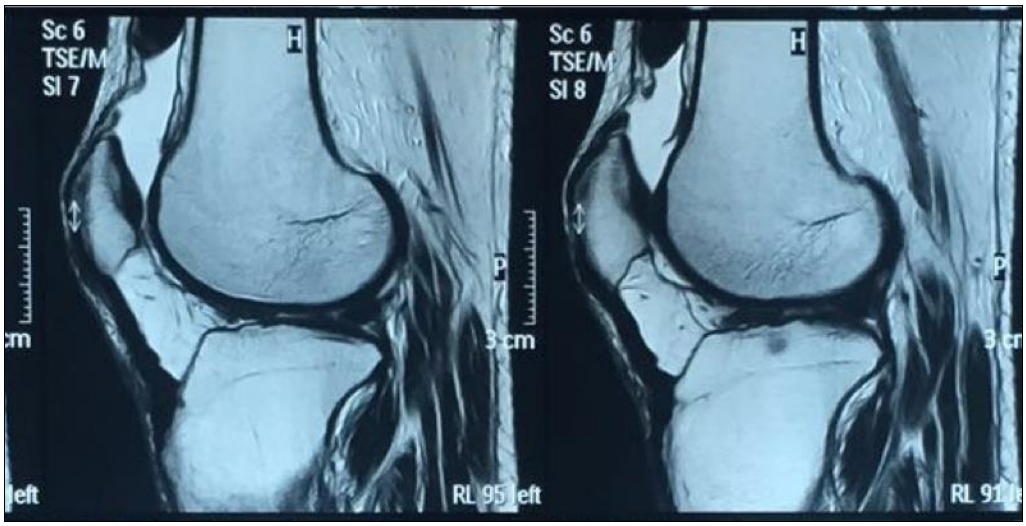

Fig 4: MRI of right knee in saggital plane showing rupture of quadriceps tendon

Conclusion

Bilateral Simultaneous Quadriceps tendon rupture is as such a rare occurrence that too in a patient with Vitiligo. Herein we report one of the causes of simultaneous bilateral quadriceps tendon rupture with retinacula tear in a patient with Vitiligo on systemic steroids.

Patients with predisposing factors should be warned about such an occurrence and awareness about this condition in medical fraternity is needed for prompt orthopaedics attention so that time and resources are not wasted over neurological investigtions.

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

1. Scuderi C. Ruptures of the quadriceps tendon. Am J Surg. 1958 Apr;95(4):626-35.
2. Neubauer T, Wagner M, Potschka T, Riedl M. Bilateral, simultaneous rupture of the quadriceps tendon: A diagnostic pitfall?: Report of three cases and meta-analysis of the literature. Knee Surg Sports Traumatol Arthrosc. 2007 Jan 17;15(1):43-53.
3. Steiner CA, Palmer LH. Simultaneous bilateral rupture of the quadriceps tendon. Am J Surg. 1949 Nov;78(5):752-5.
4. Arumilli B, Adeyemo F, Samarji R. Bilateral simultaneous complete quadriceps rupture following chronic symptomatic tendinopathy: A case report. J Med

Case Reports. 2009 Sep 8;3:9031.
5. Senevirathna S, Radha S, Rajeev A. Bilateral simultaneous rupture of the quadriceps tendon in a patient with psoriasis: A case report and review of the literature. J Med Case Reports. 2011 Dec;5(1):331.
6. Bhole R, Flynn JC, Marbury TC. Quadriceps tendon ruptures in uremia. Clin Orthop. 1985 May;(195):200-6.
7. Lewis AC, Purushotham B, Power DM. Bilateral Simultaneous Quadriceps Tendon Rupture in a Bodybuilder. Orthopedics. 2005 Jul;28(7):701-2.
8. Morgan J, McCarty DJ. Tendon ruptures in patients with systemic lupus erythematosus treated with corticosteroids. Arthritis Rheum. 1974 Nov;17(6):1033-6.
9. Razzano CD, Wilde AH, Phalen GS. Bilateral Rupture of the Infrapatellar Tendon in Rheumatoid Arthritis: Clin Orthop. 1973 Mar;91:158–61.
10. Rogers A, Rix S, Kulkarni R. Simultaneous Rupture of a Patellar Tendon and Contralateral Quadriceps Tendon in a Healthy Individual. Orthopedics. 2003 Aug;26(8):817-8.

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