



CHRONIC PATELLAR TENDON RUPTURE TREATED WITH HAMSTRING GRAFT- A CASE REPORT

Orthopaedics

Sanjay Raji* Final Year PG (MS Ortho), Department Of Orthopedics , Sree Balaji Medical College, CLC Works Road , Chromepet *Corresponding Author

Dr. Venkatpraveen Final Year PG (MS Ortho), Department Of Orthopedics , Sree Balaji Medical College, CLC Works Road , Chromepet

ABSTRACT

INTRODUCTION

Neglected patella tendon rupture which are presented 6 weeks after injury are rare but it can be disabling¹. It occurs usually beneath the inferior pole of patella in younger population during sport related activities^{2,3}. Patients are usually would have undergone native splinting. They are usually tough to repair^{3,6}. Although different techniques have been described we have reconstructed using hamstring graft⁷.

KEYWORDS

neglected patellar tendon injury ,hamstring graft, chronic rupture, figure of 8

Case Report

A 26 Year Old Male , Came With Complains Of Weakness Of Legs, Difficulty In Climbing Stairs Up And Down, Difficulty In Getting Up From Squatting Position. Patient Complains Of Apprehension To Fast Walking Or Running Due To Buckling Of Knee. He Had A Past History Of Fall From Motorcycle 6 Month Ago Over A Flexed Knee, For Which He Underwent Native Splinting For 3 Months, 6 Splints Each For 15 Days. On Examination Patient Could Not Do Active Extension. Passive Rom Was Full. Quadriceps Power Was 3/5 . Quadriceps Wasting Of 1cm Was Present .a Palpable Defect Was Felt Beneath The Inferior Pole Patella. X Ray Showed High Riding Patella. Pre Operatively Mri Was Taken Showed Full Thickness Rupture Of Acl.

Operative Procedure

Under Spinal Anaesthesia, Parts Painted And Draped, Patella Was Marked And Tibial Tuberosity Was Marked (fig:1), A Midline Anterior Incision Was Made, We Found Here Was Complete Rupture And Degeneration Of The Tendon (fig:2), Acl Rupture End Was Visualised (fig:3) . The Upward Migrated Patella Was Tracked Down Without Any Difficulty. Two Transverse Tunnel Was Made Within The Patella (fig:4) By Guide Wire And Another Tunnel Parallel To These Was Within The Tibial



Fig:1 Patella And Tibial Tuberosity Is Marked.



Fig 2 Showed Complete Rupture Of Patellar Tendon With No Residual Tendon

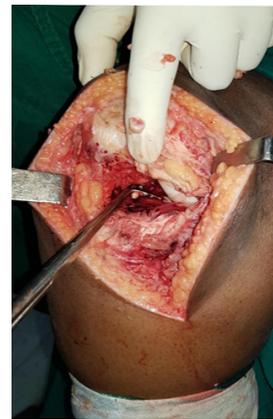


Fig 3

tuberosity. Hamstring tendons, gracilis and semitendinosus was harvested using open tendon stripper(fig:5) , insertion on tibial tuberosity was not detached , muscle tissue were removed. Gracilis was passed from same side to upper tunnel of patella , semi tendinosus was passed in opposite side of lower tunnel (fig 6) was brought out to like " figure of 8" fashion within the tibial tunnel , both semi tendinosus and gracilis was sutured with 2-0 ethibond to complete the tendon reconstruction.(fig 7,8,). Fluoroscopy was used to confirm the position of the patella to maintain Insall- salvatio ratio at 30 degrees of flexion. The strength of the construct was tested by flexing the knee to 90 degree (fig 9). Cerclage wire was put to maintain the stability of the construct. Patient was immobilised in long knee brace and was started on static quadriceps exercises for 4 weeks . Cerclage wire was removed at 4th week, was started on ROM exercises with continuous passive motion, touch weight bearing was started on 6 weeks period , full weight bearing was stated on 10 weeks period.



Figure 9 Transverse Tunnels Created Using Guide Wires



Figure 4 Hamstring tendons harvested without detaching the insertion site with open tendon stripper

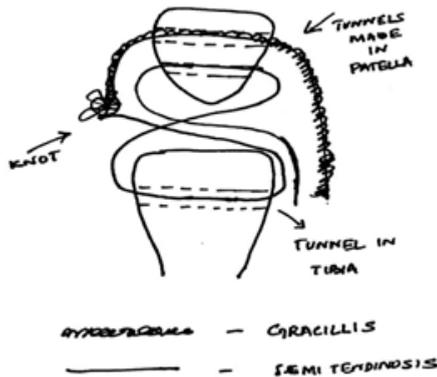


Figure 5 Schematic diagram of how tendons were passed through tunnels of patella and tibia

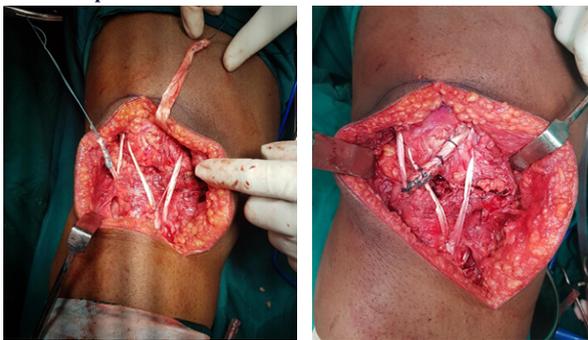


Figure 6 Figure of 8 construct was made with hamstring tendons



Figure 7 Constructed was checked with 90 degrees of flexion

RESULTS

One year operatively patient was able to gain active flexion of 130degrees with no extensor lag, quadriceps power regained to 4/5, insall salvation ratio maintained to 1.07, outcome was evaluated by rao criteria¹ was excellent, kujula score 94.1, lysholm score 92.3 were good.

DISCUSSION

Neglected patella tendon rupture which are presented 6 weeks after injury are rare but it can be disabling¹. It occurs usually beneath the inferior pole of patella in younger population during sport related activities²⁻⁵. Patients are usually would have undergone native splinting. They are usually tough to repair^{3,6}. Ecker et al.⁸ in 1979 reported four cases of late patellar tendon reconstruction using both the gracilis and semitendinosus tendons. Each tendon was passed through separate tunnels in patella and was sutured together. A cerclage ss wire was used to give stability. Dejour et al.⁹ in 1992 reported tendon ruptures of patella operated with opposite leg autograft with tibial bone block, Third of patellar ligament, Patella block and quadriceps tendon ,although it caused morbidity to the normal leg. In 2007 Van der zaaal¹⁰ reported cases fixed with bioscrews and staples. Chen et al used¹¹ similar to our procedure preserving the distal attachments for vascularity. Similarly many materials were used Achilles tendon¹⁵⁻¹⁷, synthetics like carbon fibre¹⁹, Dacron²⁰, lars²¹. we used a method similar to Chen et al and method adopted in Ganga hospitals⁵. No costlier implant was used, no morbidity was given to opposite knee. Our outcome was good with active flexion of 130degrees with no extensor lag, quadriceps power regained to 4/5, insall salvation ratio maintained to 1.07, outcome was evaluated by rao criteria¹ was excellent, kujula score 94.1, lysholm score 92.3. however it is imperative to maintain normal length of patella tendon to prevent alta and baja, can hamper knee function, and reduce pressure of patella over trochlea which can accelerate patelofemoral arthritis. MRI done preoperatively showed ACL rupture, which the patient asked us to do on a later date.

CONCLUSION

Our operative procedure was a combination of Chen et al¹¹ and ganga hospital SR Sundararajan⁷, our outcome was also excellent with no extensor lag, good ra, kujala, lysholm scores. Even our technique can also be adopted in future surgeries.

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