

ALL-IN TECHNIQUE-ALTERNATIVE IN TREATMENT OF MENISCAL TEARS

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SUMMARY:

46 patients with longitudinal vertical meniscal tears, localized in red-red and red-white zone were treated using RAPIDLOC™ Implant for meniscal repair. Follow-up average 6 months. Results: Lysholm score –average 93; Tegner activity score -3,7; Marshall Rating System -93% excellent, 7% good, 0% poor. The average time for return to full presurgical activities, including sports, was 4 mounts.

Key words: meniscal repair- RAPIDLOC™-all inside technique

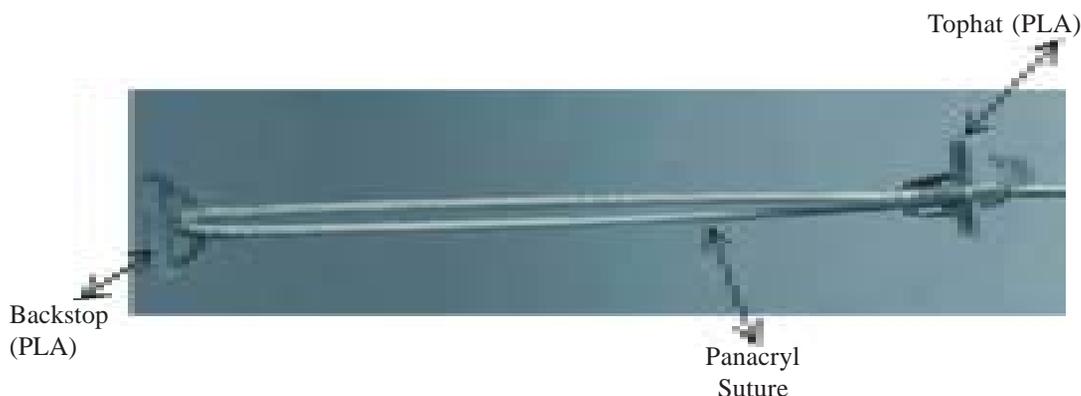
Over the last 50 years, attitudes toward the menisci have evolved gradually from a perception of them as inconsequential, functionless structures to the view that they are vital, integral components of normal knee function. Laboratory investigations have shown that the menisci participate in many important functions, including tibiofemoral load transmission, shock absorption, lubrication, passive stabilization of the knee, prevent synovial impingement, and acts as a secondary anterior-posterior stabilizer in ACL- deficient knee. Both animal and clinical studies have documented the frequent development of degenerative changes within the knee following meniscectomy. The focus of treatment has shifted toward preservation and repair of the meniscus whenever possible.

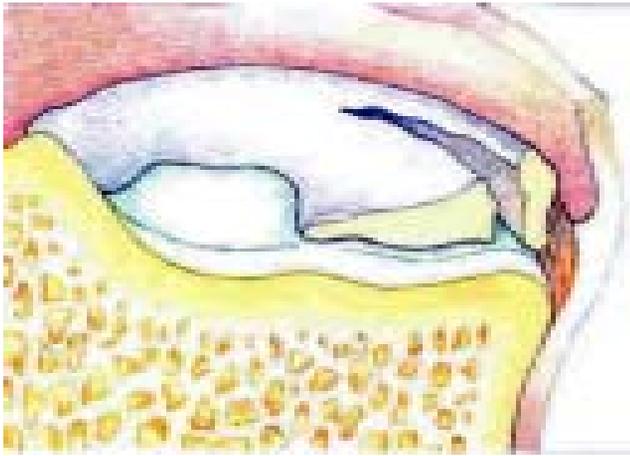
With repair currently the preferred treatment, a number of different repair techniques have evolved. Repair techniques generally fall into 4 categories: open, arthroscopic inside-to outside, arthroscopic outside-to- inside, and

arthroscopic all-inside. Open repair techniques were used initially, but arthroscopic inside-to outside approaches soon evolved to minimize the risk associated with open surgery and enable access to portions of the meniscus that are difficult to reach with an open approach. An outside-to- inside approach was later recommended to minimize the risk to posterior neurovascular structures. Eventually, an all-inside technique for posterior horn tears was developed that obviates posterior capsular exposure, further reducing neurovascular risk. Most recently, a number of all-inside arthroscopic meniscal repair devices have been introduced to the market, touting simpler surgical techniques, shorter surgical time, and reduced surgical risk. The purpose of this article is to show our experience with one of the more popular meniscal repair devices-Rapidloc (Mitek Johnson & Johnson).

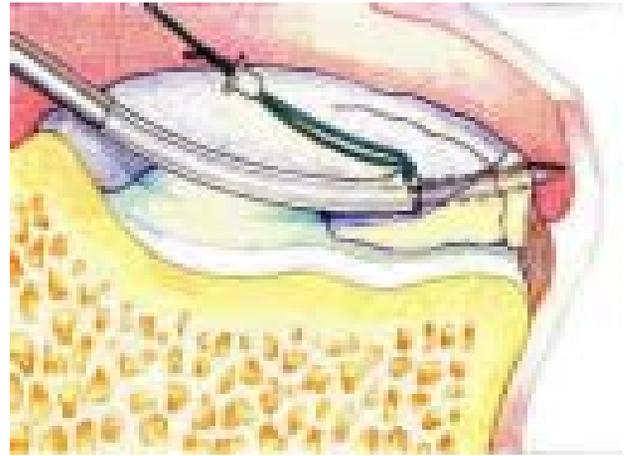
MATERIALS AND METHODS

From May2004 though April 2005, 46 arthroscopic all-inside meniscal repairs were performed using Rapidloc (Mitek Johnson&Johnson) implant. Average age was 28.5 years, 28 patients were man and 18 women.38 patients were with medial meniscus tears, and 8 with lateral meniscus tear. 13 patients were with simultaneously ACL rupture, reconstructed at the same time with meniscal repair. 26 tears were localized in red-red zone and 20-in red- white zone. 21 cases were treated in first mount of the trauma and 25 after that. In all cases were used Rapidloc (Mitek Johnson & Johnson) implant.





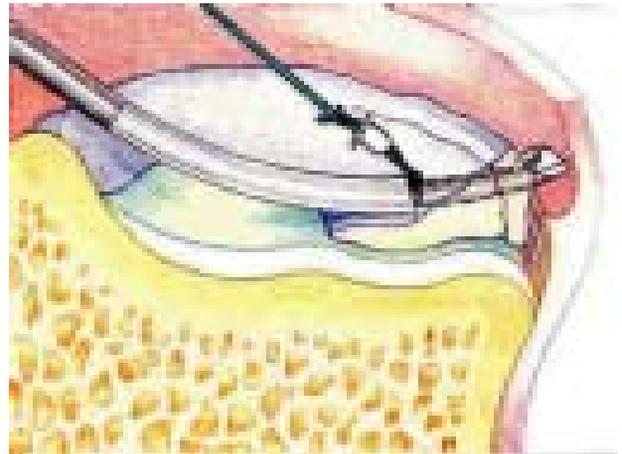
- Preparation of the tear is important
- Freshen the tear with a rasp or shaver.



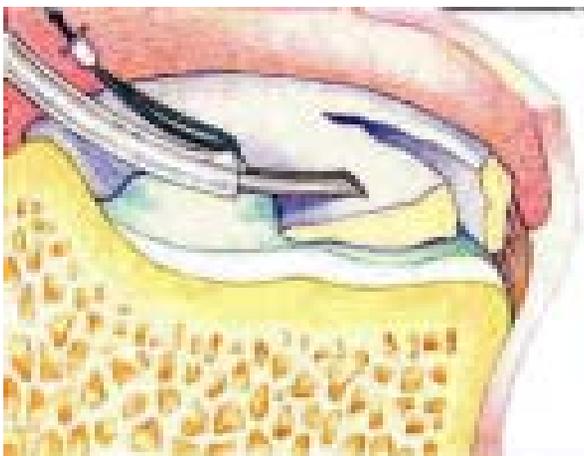
- Pass the needle through the Meniscal substance and into the pericapsular tissue posteriorly.



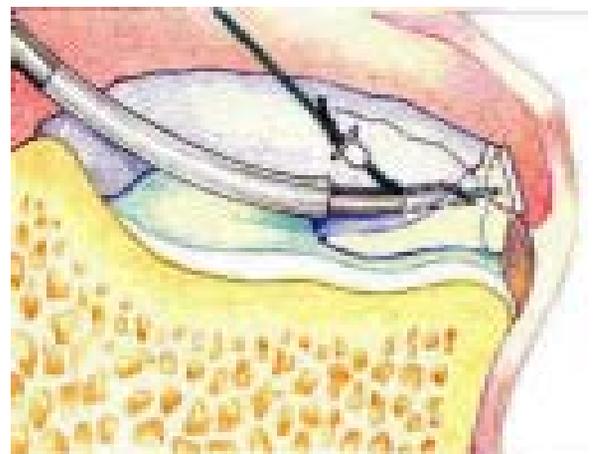
- Insert the applicator through a standard portal
- Through portal alone
- Through a cannula
- With the help of the Malleable Graft Retractor



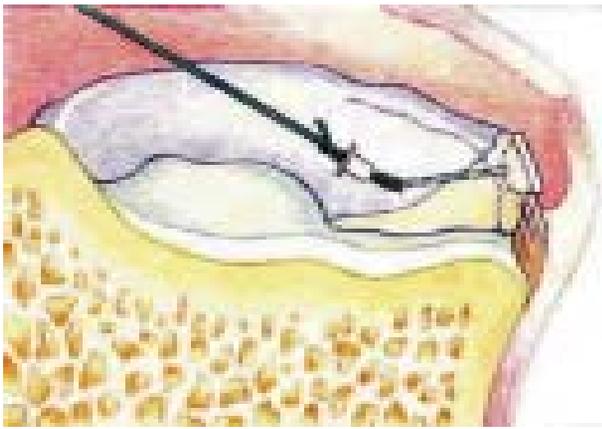
- Deploy the backstop
- Maintain pressure on the gun to prevent kickback



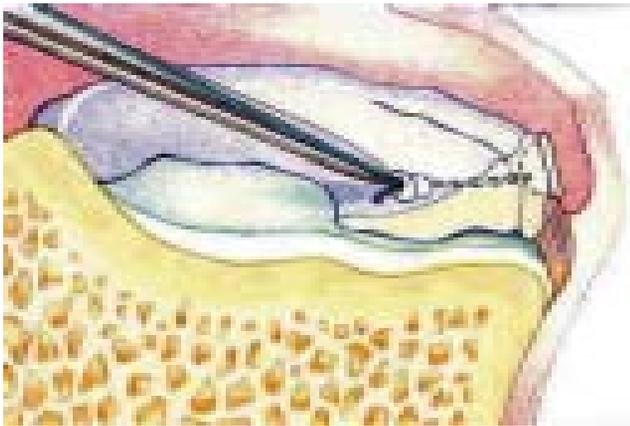
- Use needle and silicone tubing to reduce the tear



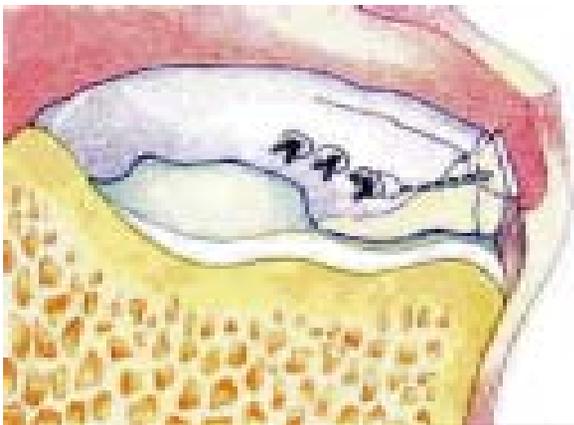
- Remove needle and applicator from joint



- Pull on the limb of suture to assure capture and fixation of the backstop



- Using the arthroscopic pusher slide the knot and top hat down to the surface of the tissue
- Use a pull/push action.
- Pull on the suture with slightly more tension to avoid slack in the suture



- Cut the limb of suture
- Repeat with additional implants
- Probe to assure tear is stable

The operated extremity is immobilized for 4 weeks in 20° flexion and allowed full weight bearing. Patients with concomitant rupture and reconstruction of ACL kept rehabilitation protocol of isolated ACL reconstruction.

RESULTS

Average time of refixation was 17 minutes. More common intraoperative complication was disintegration of implant- 2 cases. The implant was removed and used again. We have not cases of transcutaneous migration of implant. In 6 cases there were complaints of local pain and tenderness, which were resolved within 4-6 weeks spontaneously or with rehabilitation and physiotherapy.

Operated knees were scored with Lysholm and Tegner scores and Marshall rating system. Average Lysholm score was 92, respectively 93.9 for single meniscal repair, and 90.1 for knees with concomitant reconstruction of ACL. Tegner activity score was 3.8 for patients with single meniscal repair, and 3.5 for patients with concomitant reconstruction of ACL. Results according to modifying Marshall rating system was excellent- 93%, 7%-good, and 0%-poor. We have not cases with thrombosis, infection, neurovascular complications, and local synovitis. Up to now we have not cases with rerupture of meniscus.

DISCUSSION

All-inside techniques offer simpler surgical techniques, shorter surgical time, and reduced surgical risk. Their more common disadvantages- decreased fixation strength versus traditional vertical and horizontal meniscal suture, risk of tenodesis of the knee, and articular cartilage damage are avoided with Rapidloc (Mitek Johnson&Johnson) implant. Practically impossible are pull-out and pull-over problems, and breakage of the implant, typical for some of early, single all-in devices. Basic problem remain high price of the implant.

CONCLUSION

All this principles and techniques must be individualized for every patient. Only joint action of orthopedic surgeon and patient, and patient confidence could bring the success of the treatment.

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