

INTEREST OF THE BOOMERANG TECHNIQUE IN MENISCALE REPAIR: ABOUT 2 PATIENTS WITH REVIEW OF THE LITERATURE**Karim El Hammiri*, Tarik El Mountassir, Moncef Boufettal, Reda Allah Bassir, Jalal Mekkaoui, Mohamed Kharmaz, Moulay Omar Lamrani and Mohamed Saleh Berrada**

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ABSTRACT

We propose through this note to describe a variant of the outside-in technique and to expose its various advantages compared to other arthroscopic techniques of meniscal repair. The results were good with a resumption of activities at 6 months. The limitation of this technique remains its indication limited to lesions of the anterior two thirds of the meniscus.

KEYWORDS: Boomerang technique- Meniscus.**INTRODUCTION**

Meniscectomy still remains the reference method in the treatment of meniscal lesions since it always finds its indication whatever the type of lesion.

In recent years, we have witnessed the advent of new techniques for the treatment of these lesions.

The first meniscal sutures date back to 1979 and 1980 made by Ikeuchi and Henning.

Since then, the operating techniques have been linked without proof of superiority of one technique over the others for all lesions.

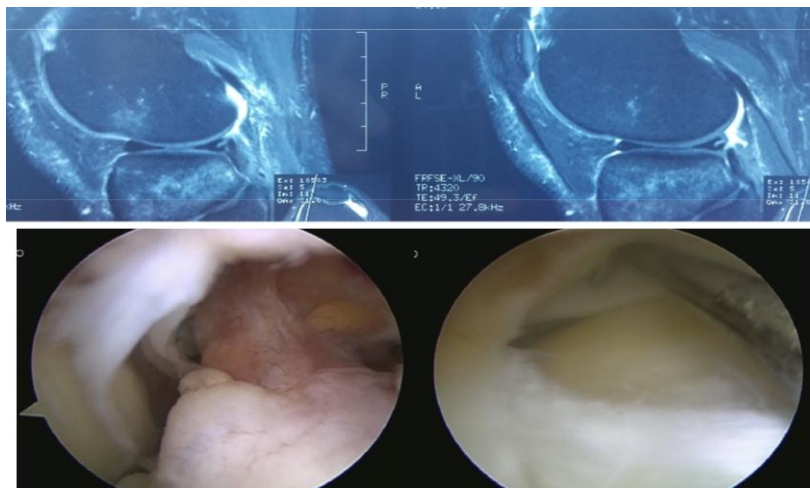
Implants have been abandoned due to their high cost and low pull-out resistance.

There are currently four groups of arthroscopic techniques: inside-out, outside-in, all-inside and hybrid techniques.

CASE PRESENTATION**1) Patient 1**

39-year-old man with knee trauma, ATCDs complains of mechanical knee pain, flailing and recurrent hyarthrosis.

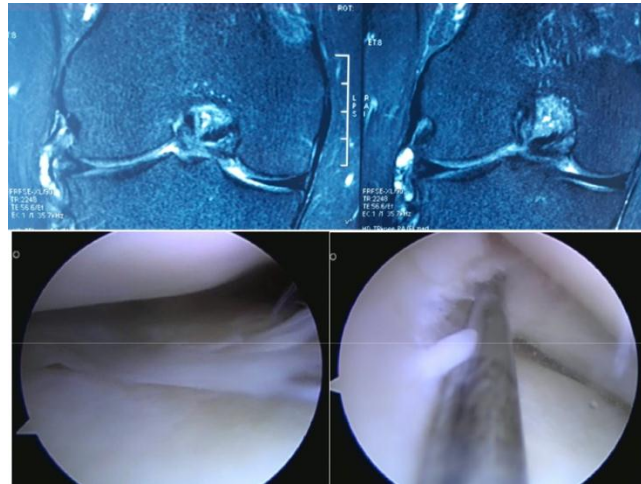
Examination: quadriceps amyotrophy, delayed hard stop on the Lachman maneuver and a rotational jump.

**Case 1: Fissure of the posterior horn of the medial meniscus.**

2) Patient 2

A 50-year-old man consults for knee pain and flailing without blocage

Examination: Renitent mass of 2cm long axis of the internal femoro tibial space, no laxity in the two planes



Case 1: Fissure of the posterior horn of the lateral meniscus

Boomerang Technique

The operation is performed under general or loco-regional anesthesia with a tourniquet at the root of the limb. (Fig1).

- **Technical platform**
- Arthroscopy column equipped with an arthroscope, a camera, an arthropump, a set and a monitor.
- A PDS n°0 thread, a vicryl n°1 thread, an 18 trocar, a feeler, prehensile forceps and a rasp.

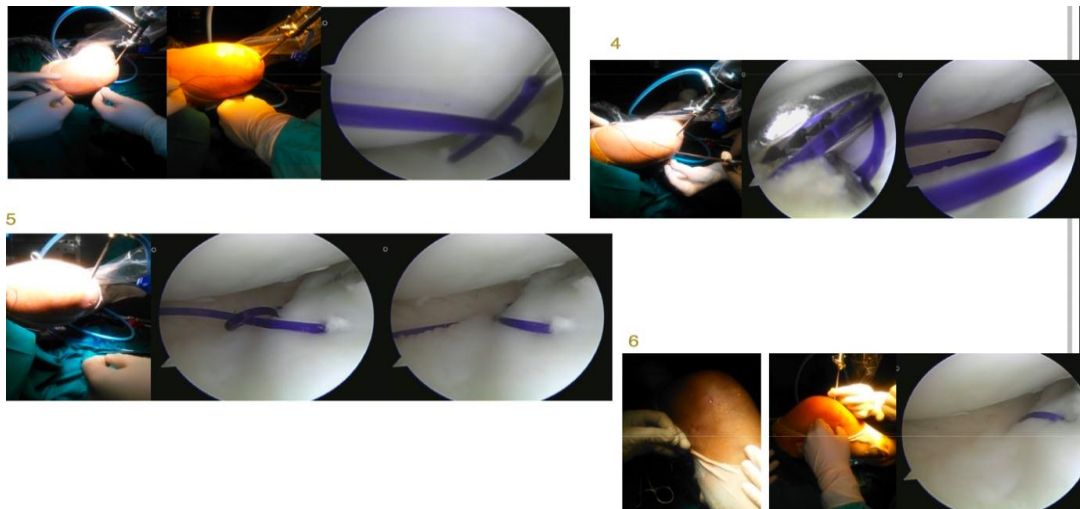


Figure 1: Opérative technique for meniscus suture.

RESULTS

- ⇒ Patient 1
- 8 month follow-up
 - No slippage
 - EVA=2
 - Return to sport at 6 months
 - Dry knee, mobility 0/0/120, no laxity
 - Lysholm score= 95
- ⇒ Patient 2:
- 9 month follow-up
 - No slippage, EVA=1
 - Return to work at 1 month
 - Lysholm score= 94

DISCUSSION

The decision to perform a meniscal suture depends on several parameters: Patient age, location of the lesion in relation to the meniscal wall, type of lesion, quality of the meniscal tissue.

Steadman's results on the failure rate of meniscal repair over a 16-year follow-up justified the extension of the indication for repair in subjects over 40 years old.^[1]

Although the failure rate of meniscal repairs is high, the morbidity associated with meniscectomy justifies conservative treatment.^[2,3]

In this sense, a recent study.^[4] comparing the cost inflicted on American society revealed the following data

| | Meniscus repair | Meniscectomy |
|--------------|-----------------|--------------|
| Failure rate | 65% | 15,1% |
| Gonarthrosis | 29,7% | 39,4% |
| PTG | 19,6% | 27,9% |

Morgan^[5]: The 1st to introduce the outside-in technique (blackberry dots)



Good results over 18 months of follow-up

⇒ Technique had been implicated in the genesis of synovitis and articular cartilage lesions.^[6]

| | N° patient | Failure | IKDC score at follow-up | Lysholm score at follow-up | Satisfaction score |
|---------------------------|------------|---------|---|----------------------------|--------------------|
| Abdelkafy ^[7] | 41 | 12% | Grade 1 in 88% of cases otherwise grade B | 90% | 88% satisfied |
| Kayhani ^[8] | | 7,6% | 91% | 80% Good and Excellent | 8 /10 |
| Calderazzi ^[9] | 28 | – | 87,5% | 93,4 | – |

Evaluation of the outside in technique in the literature

Boomerang Stitches offer

- Vertical orientation : Resistance to shear forces.^[10,11,12] better coaptation and symmetry of the edges of the lesion^[13]
- Fil PDS: Resistance, slow resorption avoid cartilage irritation and foreign body reactions. Respect the healing time.^[14,15]
- Additional incisions less damaging than those of the inside-out technique, less neurovascular risk than the inside out technique
- Use of fine materials less trauma to cartilage in a narrow workspace
- Inexpensive materials compared to inside-out and all-inside techniques
- Simplicity therefore short learning curve (realization in less than 15 min in our work)

CONCLUSION

Indications for meniscal repair should be extended to subjects over 40 years of age, even with degenerative lesions.

The Boomerang technique meniscal is a reliable, simple technique for safe and inexpensive repair.

The limitation of this technique remains its indication limited to lesions of the anterior two thirds of the meniscus.

CONSENT

The patients have given their informed consent for the case to be published.

Competing Interests

The authors declare no competing interest.

Authors 'Contributions

All authors have read and agreed to the final version of this manuscript and have equally contributed to its content and to the management of the manuscript.

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