A novel technique for arthroscopic outside-in meniscus repair using a newly designed needle

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INTRODUCTION: Three methods are commonly used for meniscus repair : 1)Inside-out 2)Outside-in 3)All-inside. For posterior horn repair, there are many existing devices such as all inside meniscal repair products (Truespan, Fast-Fix, RapidLoc) and Double arm needle (Inside-out technique). For anterior horn or mid body, because of limitation of approach, outside-in technique is preferred. However, there are few devices developed for outside-in technique. Mostly 'shuttle relay' is used , but it has several disadvantages : 1) narrow working space 2) high chance that suture and 'shuttle relay' get stuck in the tissue 3) can cause iatrogenic injury to cartilage or other tissue around 4) time consuming. A new needle was developed to solve these problems and I'll describe a novel surgical technique that has been used successfully

METHODS:

Surgical technique video will be presented :

Unique design of new needle allows sutures to be handled both anterograde and retrograde through tissue. Therefore, complex tools such as shuttle relay and grasper are no longer needed. Suture is possible with just one needle and any kind of thread (PDS, Ethibond and Fiberwire) preferred by operator can be used.

RESULTS:

New needle has several advantges : 1)Time saving 2)Low profile needle (1.0 ~ 1.2 mm) 3) Single needle allows better use of the working space 4) Reduce possibility of iatrogenic injury to cartilage 5) Can make vertical suture easily. It can be used in various types of meniscus surgery : 1) Vertical, peripheral tear of AH of MM,LM 2) MM or LM Bucket handle tear 3) MAT (Meniscal allograft transplantation). Not only for meniscus, it also can be applied for other arthroscopic surgery including wrist (TFCC injury), elbow, ankle, shoulder and so on.

DISCUSSION AND CONCLUSION:

Using outside-in method with this newly designed needle, anterior horn or mid body meniscus tear could be repaired very easily and safely.