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POLLARD VS. YOON METHOD

POLLARD METHOD

Pollard Method: Images are used to size potential patients for grafts using conversion factors. "Allograft and synthetic meniscal replacement have the potential to thwart the inevitable degenerative processes that occur in the menisctomized knee. Meniscal implants must, however, be size and side specific. This investigation demonstrated that meniscal size can reliably be determined from standard AP and lateral knee radiographs. The coronal width of the medial and lateral menisci roughly equaled the distance from the respective tibial eminence to the periphery of the tibial compartment on AP films. The Sagittal length of the medial meniscus is 80%, and the lateral meniscus 70% of the anterior-to-posterior tibial plateau dimension measured from lateral radiographs. Correcting for magnification with a calibrated measuring device, meniscal sizing by these parameters can be determined within 8.4%, or 3.8 mm of error.[1]"

YOON METHOD

Yoon Method (Modified Pollard): "The measurements under strict radiographic protocol, as in our study, reproduced the relation between the anatomic and radiographic measurements of tibial plateau according to their protocol, which resulted in the following equation anatomic length = 0.523 plateau length (according to the Pollard method) 15.2—and not as they suggested (anatomic length = 0.73 plateau length). When based on the conventional Pollard method, the accuracy was 40%. In contrast, when the modified Pollard method was used (anatomic length = 0.523 Pollard's plateau length 15.2), the accuracy increased to 92%"[2].

1. Matthew E. Pollard, Qian Kang, M.D., and Eugene E Berg, M.D. "Radiographic Sizing for Meniscal Transplantation", *Arthroscopy: The Journal of Arthroscopic and Related Surgery*, Vol 11, No 6 (December), 1995: pp. 684-687.

2. Yoon JR, Kim TS, Lim HC, Lim HT et al. "Is Radiographic Measurement of Bony Landmarks Reliable for Lateral Meniscus Sizing?" *Am J Sports Med*. 2011; 39(3):582-590.

Pollard or Yoon?
Sizing Meniscus

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Medial

Width: (AP)= (1.0) X (x-ray/MRI measure)

Length: (Lat)= (0.8) X (x-ray/MRI measure)

A calculation based on bony landmarks described by M.E. Pollard[1] (Pollard Method) has been the predominant method utilized by tissue banks to estimate the size of graft needed for each patient. Jung-Ro Yoon[2], in 2011, conducted ***a study in which he found that the Pollard Method is relatively accurate for the medial meniscus*** but not for the lateral meniscus.

Lateral

Width: (AP)= (1.0) X (x-ray/MRI measure)

Length: (Lat)= (0.52) X (x-ray/MRI measure in cm) + (0.52cm)

Camila Cohen[3], in 2016, and Andreas Gomoll[4], in 2020, both independently studied various methods and concluded in agreement with Yoon that the Pollard method should be utilized for calculating the medial meniscus size and that ***Yoon's modified formula (Yoon Method) was more accurate for the lateral meniscus.***

1. M E Pollard, Q Kang, E E Berg. **Radiographic sizing for meniscal transplantation.** *Arthroscopy*. 1995 Dec;11(6):684-7.
2. Jung-Ro Yoon, Taik-Seon Kim, Hong-Chul Lim, Hyung-Tae Lim and Jae-Hyuk Yang **Is Radiographic Measurement of Bony Landmarks Reliable for Lateral Meniscal Sizing?** *Am J Sports Med* 2011 39: 582 originally published online January 13, 2011.
3. Cury, Nilson Roberto Severino and Claudio Santili Camila Cohen Kaleka, Alfredo Santos Netto, Júlio César Almeida e Silva, Marcelo Key Yamaji, Ricardo de Paula Leite, Which Are the Most Reliable Methods of Predicting the Meniscal Size for Transplantation? Am J Sports Med published online July 15, 2016.
4. Luiz Felipe Ambra, MD, PhD, Camila Cohen Kaleka, MD, Pedro Debieux, MD, PhD, Julio Cesar Almeida, MD, Nehal Shah,{ MD, Moises Cohen, MD, PhD, and Andreas Gomoll, MD. Radiographic Methods Are as Accurate as Magnetic Resonance Imaging for Graft Sizing Before Lateral Meniscal Transplantation. Am J Sports Med . First Published October 27, 2020.