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The Predictability And Reliability Of A ‘Sentinel’ Vessel As An Anatomical Landmark During Hamstring Tendon Harvesting – A Prospective Study

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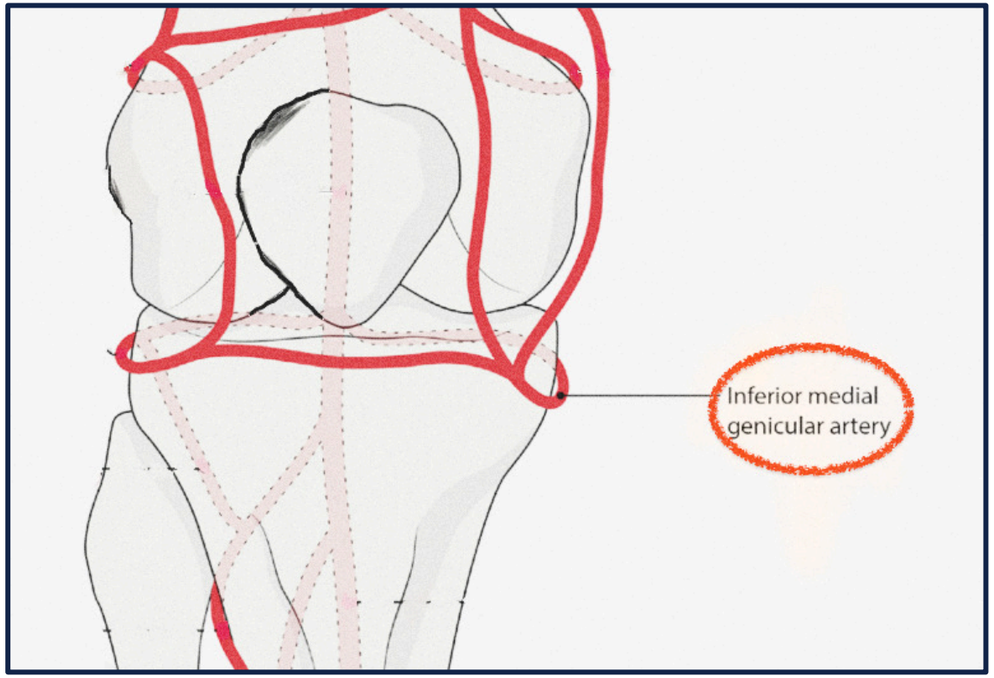
Introduction

Hamstring identification and harvesting is one of the most important steps of ACL reconstruction (ACLR).

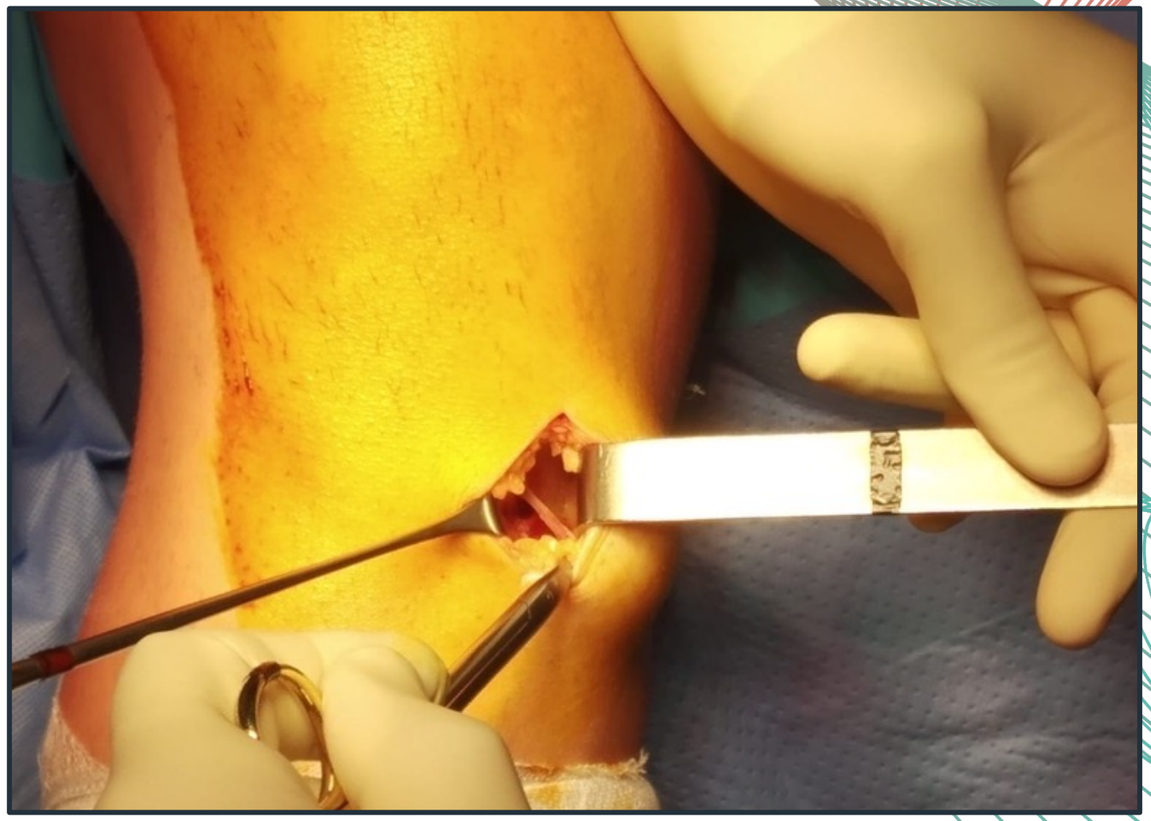
Recent studies have described a vascular landmark that aimed to improve procedure predictability and decrease harvest-related complications.

It is reported that the vascular landmark called either “sentinel vessel” or **inferior medial geniculate artery branch (bIMGA)** may not be present in all patients.



Study goal

To assess the encountering of this vascular structure (bIMGA) during our ACLRs and determine if it can be used as a reliable anatomical landmark during graft harvesting.



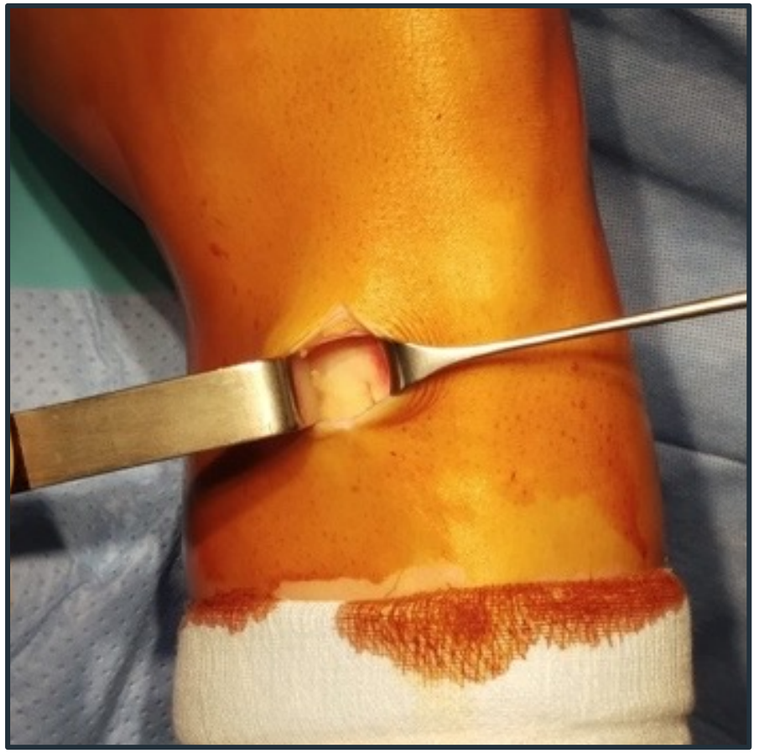
Material and methods

Consecutive patients that underwent ACLR with hamstring tendon (HT) autograft, operated by the same main surgeon and surgical team, in the same hospital.

The presence/absence of the bIMGA was noted for every patient.

The presence/absence of the bIMGA was associated with age interval, sex, and level of physical activity.

bIMGA identification



Results

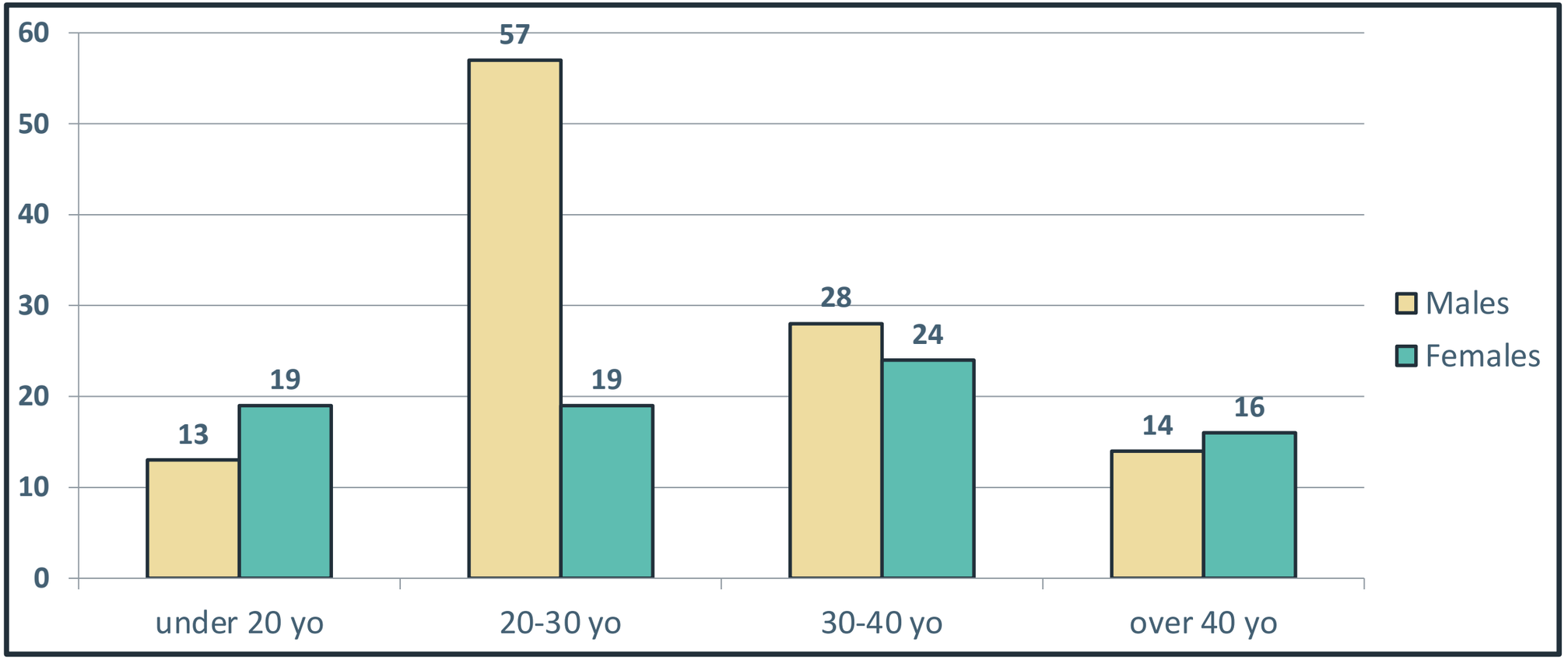
213 patients (135 males and 78 females), 15 - 58 years old.

bIMGA encountered in 73 males (54.07%) and 26 females (33.3%).

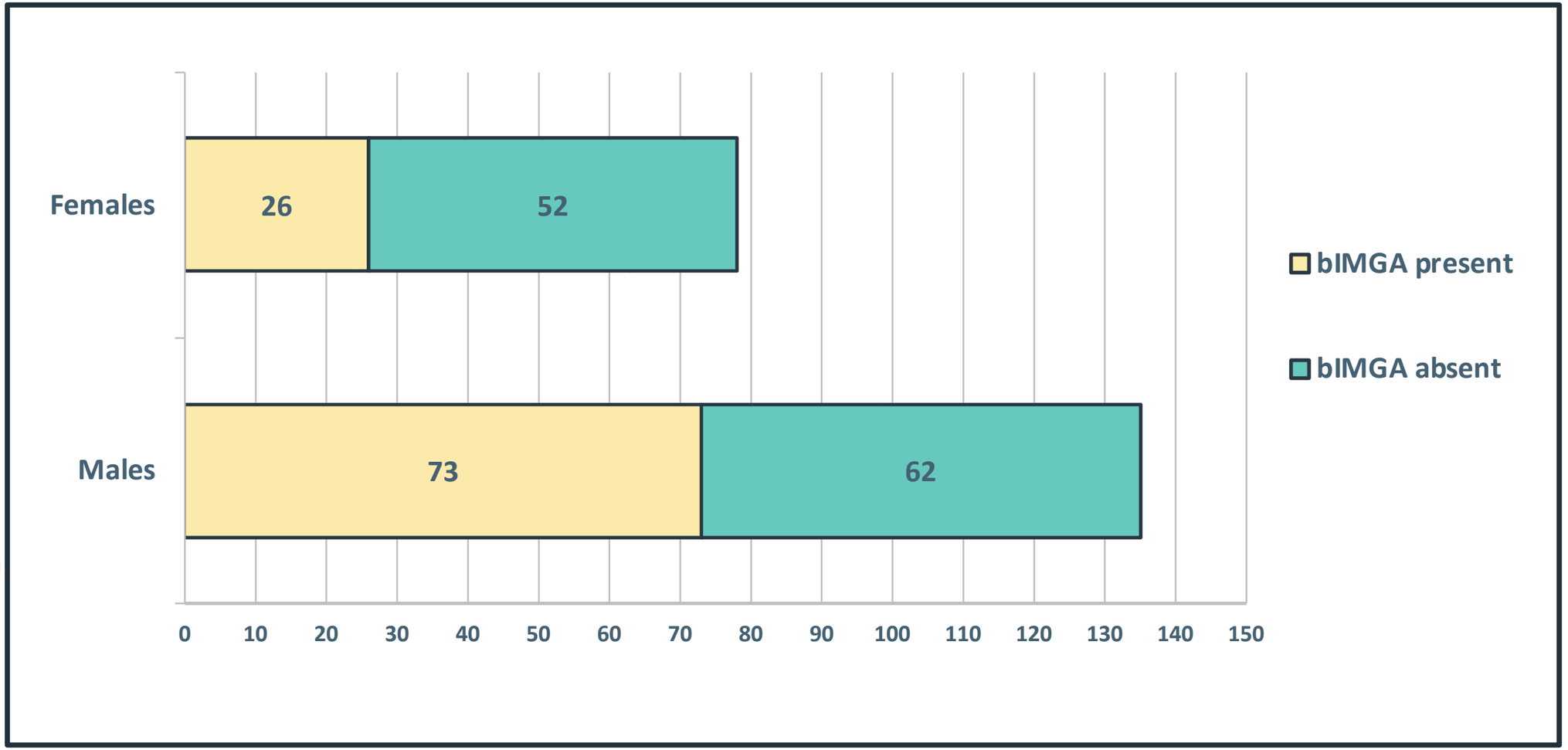
Highest incidence under 20 years old for males (9/13; 69.2%) and females (12 /19; 63.1%) alike.

No statistical significance between vascular presence and patient baseline characteristics.

Patient age distribution

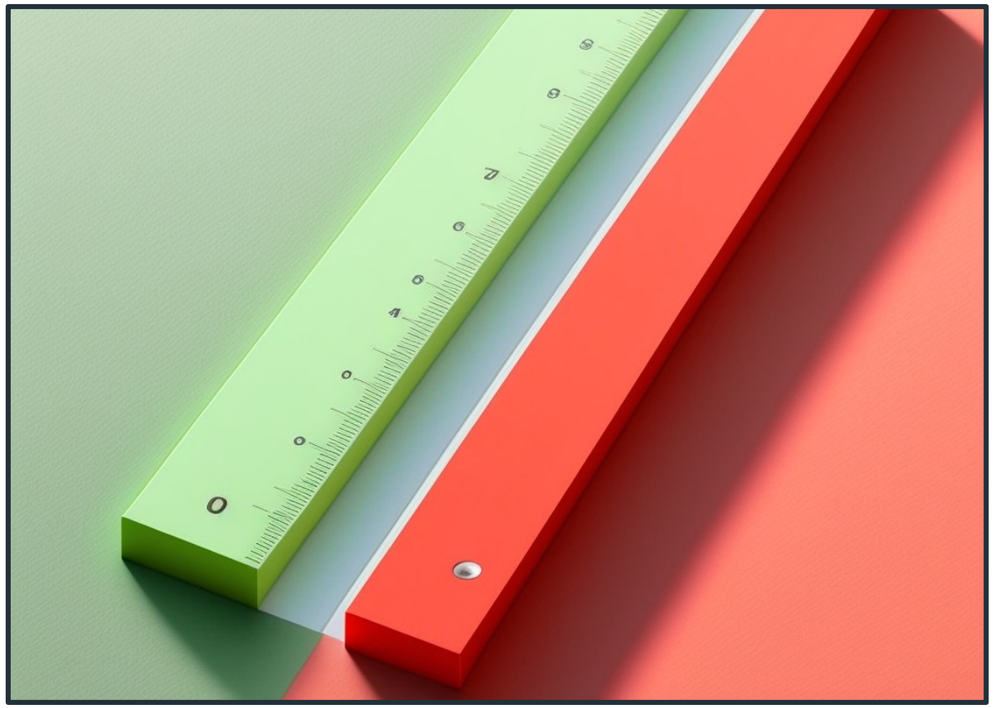


Gender related findings of the bIMGA



Conclusion

The authors can’t recommend using the bIMGA as a reliable landmark during HT harvesting.



References

Grassi CA, Fruheling VM, Abdo JC, de Moura MFA, Namba M, da Silva JLV, da Cunha LAM, de Oliveira Franco APG, Costa IZ, Filho ES. Hamstring tendons insertion - an anatomical study. Rev Bras Ortop. 2013 Oct 18;48(5):417-420. doi: 10.1016/j.rboe.2012.07.012. PMID: 31304145; PMCID: PMC6565974.

Solman CG Jr, Pagnani MJ. Hamstring tendon harvesting. Reviewing anatomic relationships and avoiding pitfalls. Orthop Clin North Am. 2003 Jan;34(1):1-8. doi: 10.1016/s0030-5898(02)00025-1. PMID: 12735196.

Pagnani MJ, Warner JJ, O'Brien SJ, Warren RF. Anatomic considerations in harvesting the semitendinosus and gracilis tendons and a technique of harvest. Am J Sports Med. 1993 Jul-Aug;21(4):565-71. doi: 10.1177/036354659302100414. PMID: 8368418.

Zaffagnini S, Golanò P, Farinas O, Depasquale V, Strocchi R, Cortecchia S, Marcacci M, Visani A. Vascularity and neuroreceptors of the pes anserinus: anatomic study. Clin Anat. 2003 Jan;16(1):19-24. doi: 10.1002/ca.10073. PMID: 12486734.

Kalthur SG, Sumalatha S, Nair N, Pandey AK, Sequeria S, Shobha L. Anatomic study of infrapatellar branch of saphenous nerve in male cadavers. Ir J Med Sci. 2015 Mar;184(1):201-6. doi: 10.1007/s11845-014-1087-2. Epub 2014 Feb 18. PMID: 24535194.

Grassi CA, Fruheling VM, Abdo JC, de Moura MFA, Namba M, da Silva JLV, da Cunha LAM, de Oliveira Franco APG, Costa IZ, Filho ES. Hamstring tendons insertion - an anatomical study. Rev Bras Ortop. 2013 Oct 18;48(5):417-420. doi: 10.1016/j.rboe.2012.07.012. PMID: 31304145; PMCID: PMC6565974.

Lun KK, Dan MJ, Broe D, Walsh WR. Inferior Medial Geniculate Artery Branch as an Anatomical Landmark for Hamstring Harvest During Anterior Cruciate Ligament Reconstruction. Arthrosc Tech. 2021 Jan 20;10(1):e177-e180. doi: 10.1016/j.eats.2020.09.022. PMID: 33532226; PMCID: PMC7823099.

Babu S, Gupte C, Gajjar S, Morris H. The 'sentinel' vessel: an anatomical landmark to identify the pes anserinus during hamstrings harvest for ACL reconstruction. Eur J Orthop Surg Traumatol. 2019 Jul;29(5):1115-1118. doi: 10.1007/s00590-019-02408-4. Epub 2019 Mar 2. PMID: 30826874.

de Lima Lopes C, Arantes G, de Oliveira RV, Pinto DM, Gonçalves MC, Gonçalves RC. Anatomical reference point for harvesting a flexor graft during arthroscopic reconstruction of the anterior cruciate ligament. Rev Bras Ortop. 2015 Feb 28;50(2):164-7. doi: 10.1016/j.rboe.2015.02.010. PMID: 26229911; PMCID: PMC4519621.

Candal-Couto JJ, Deehan DJ. The accessory bands of Gracilis and Semitendinosus: an anatomical study. Knee. 2003 Dec;10(4):325-8. doi: 10.1016/s0968-0160(02)00154-0. PMID: 14629934.

Paraskevas GK, Raikos A, Ioannidis O. Supernumerary semitendinosus muscle: A rare case presentation and its clinical significance. Clin Anat. 2010 Nov;23(8):909-10. doi: 10.1002/ca.21029. PMID: 20830796.

Yasin MN, Charalambous CP, Mills SP, Phaltankar PM. Accessory bands of the hamstring tendons: A clinical anatomical study. Clin Anat. 2010 Oct;23(7):862-5. doi: 10.1002/ca.21020. PMID: 20607820.

Cidambi KR, Pennock AT, Dwek JR, Edmonds EW. Avoiding Anomalous Tendon Harvest at the Pes Anserinus Insertion. J Knee Surg. 2016 Jan;29(1):80-3. doi: 10.1055/s-0034-1398372. Epub 2015 Jan 3. Erratum in: J Knee Surg. 2016 Jan;29(1):e1. PMID: 25556897.

Shahid S, Saghir N, Cawley O, Saujani S. A Cadaveric Study of the Branching Pattern and Diameter of the Genicular Arteries: A Focus on the Middle Genicular Artery. J Knee Surg. 2015 Oct;28(5):417-24. doi: 10.1055/s-0035-1549021. Epub 2015 Apr 18. PMID: 25892007.