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Assessing the Risk of Iatrogenic Neurovascular Injury in All-Inside Medial Meniscal Repair Between Standard Versus Arthroscopic MRIs

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Faculty Disclosure Information

- Nothing to disclosure



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Introduction

Pre-operative MRI image of
a slight knee flexion position



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Actual arthroscopic lateral meniscal
repair position MRI image



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Knowledge Gap

No previous studies have examined risk assessment comparing between preoperative knee MRI and actual arthroscopic medial meniscal repair position MRIs.



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Methods

Patient

**Pre-operative
MRI**

**Arthroscopic
surgery**

**MRI in slightly knee
flexion with valgus
force and joint fluid
dilatation**

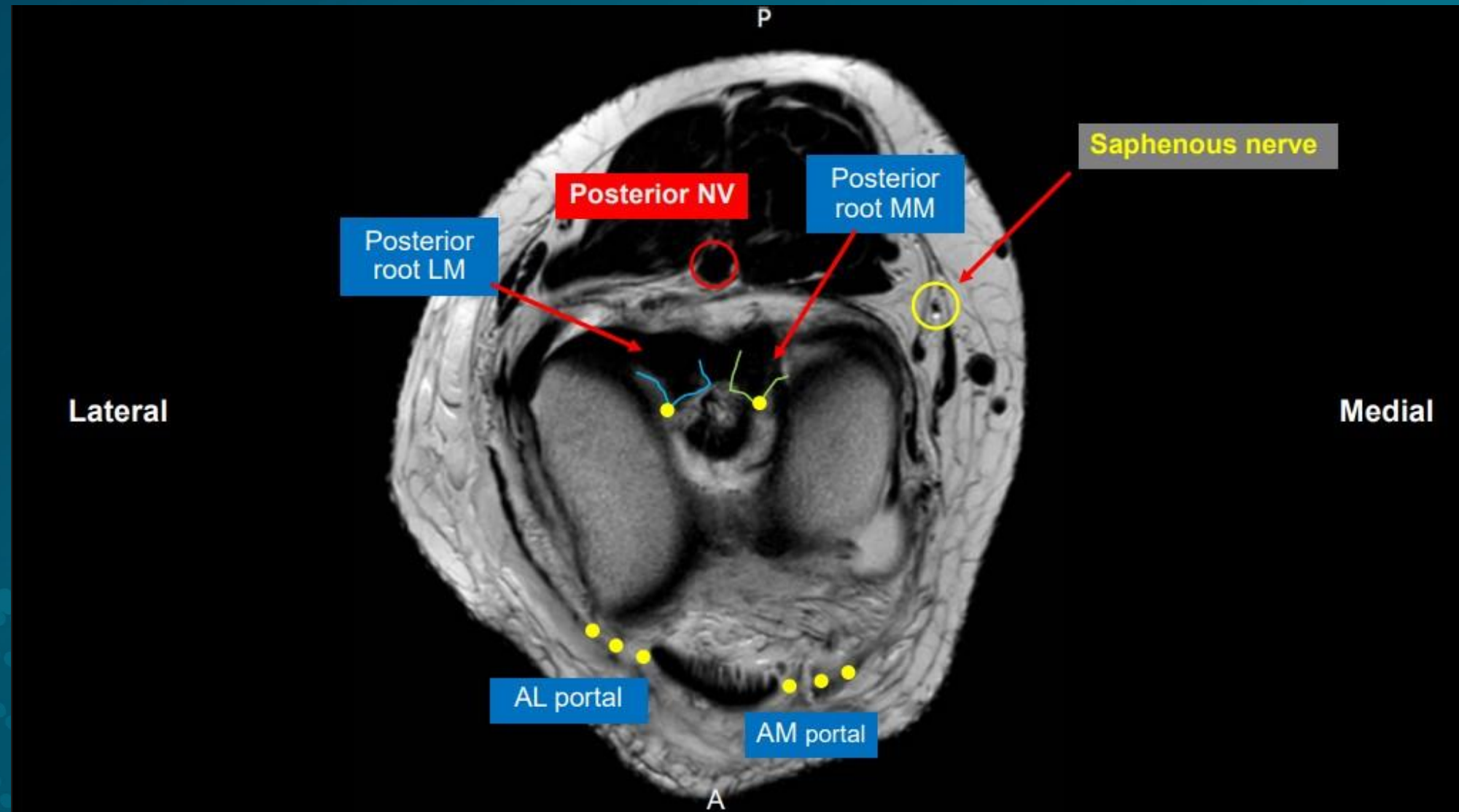


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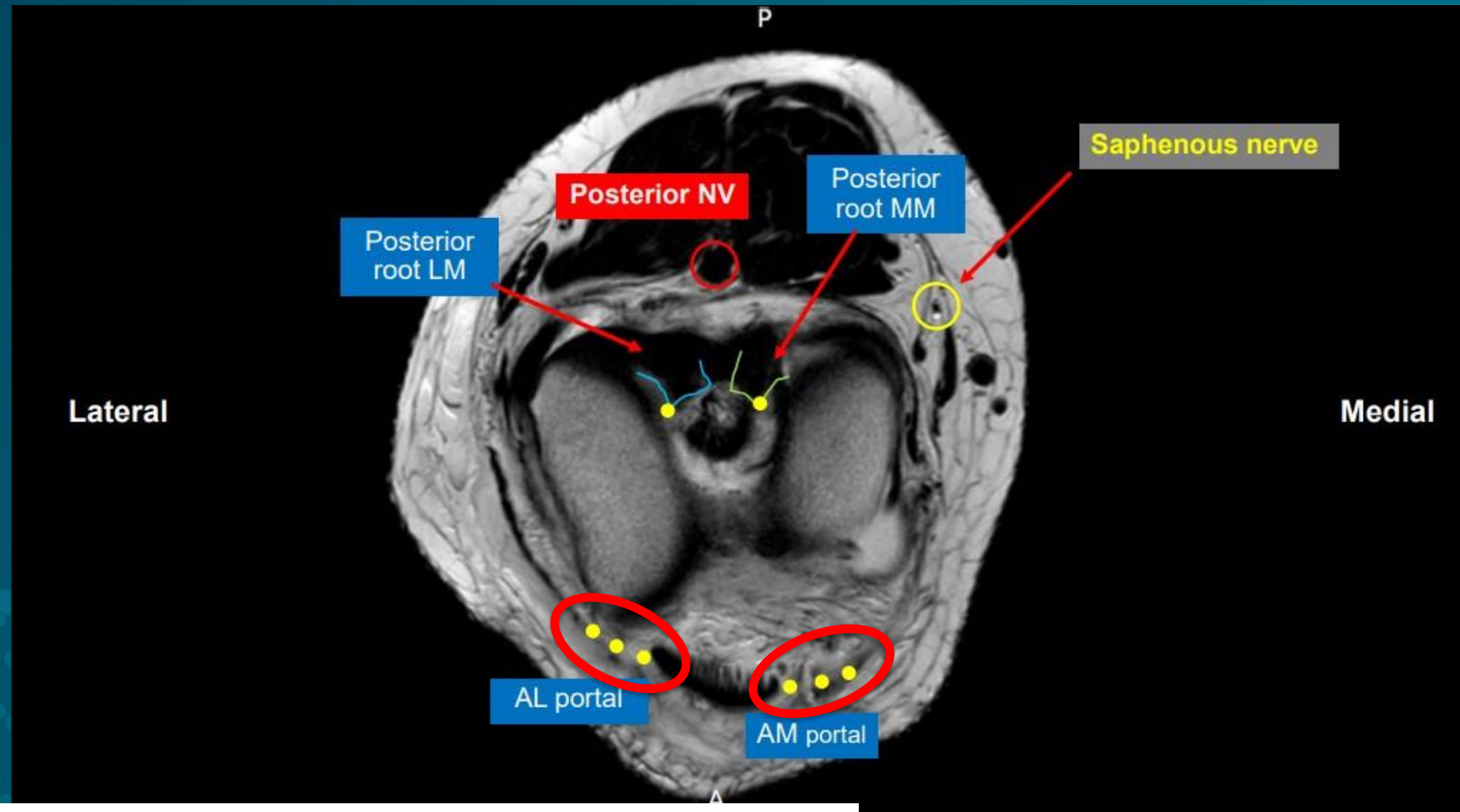


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Methods (Identify structures)



Methods (Identify structures)



Portals at 0 , 5 and 10 mm from the lateral border of the patellar tendon

Portals at 0 , 5 and 10 mm from the medial border of the patellar tendon

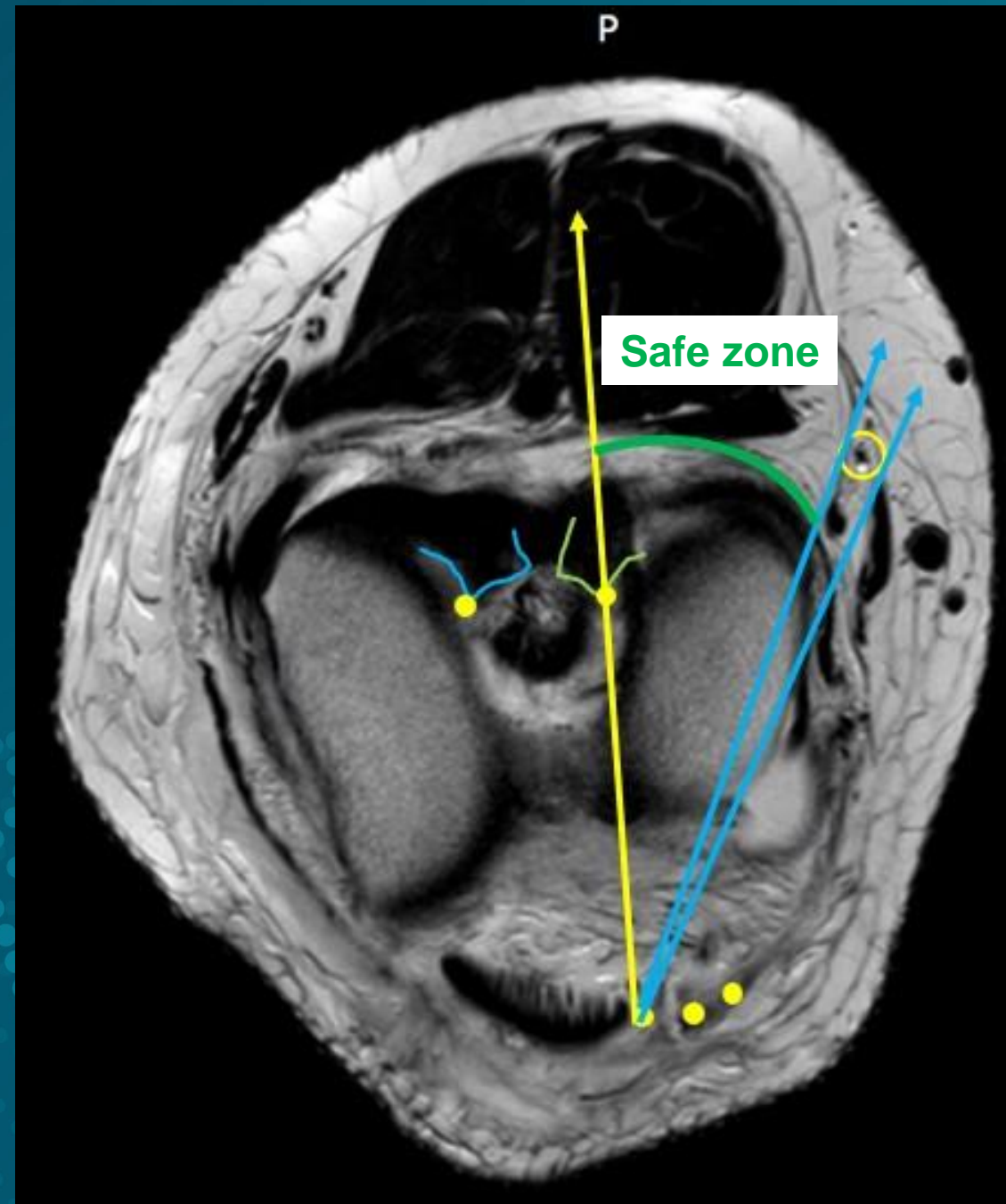


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Methods (Identify structures)

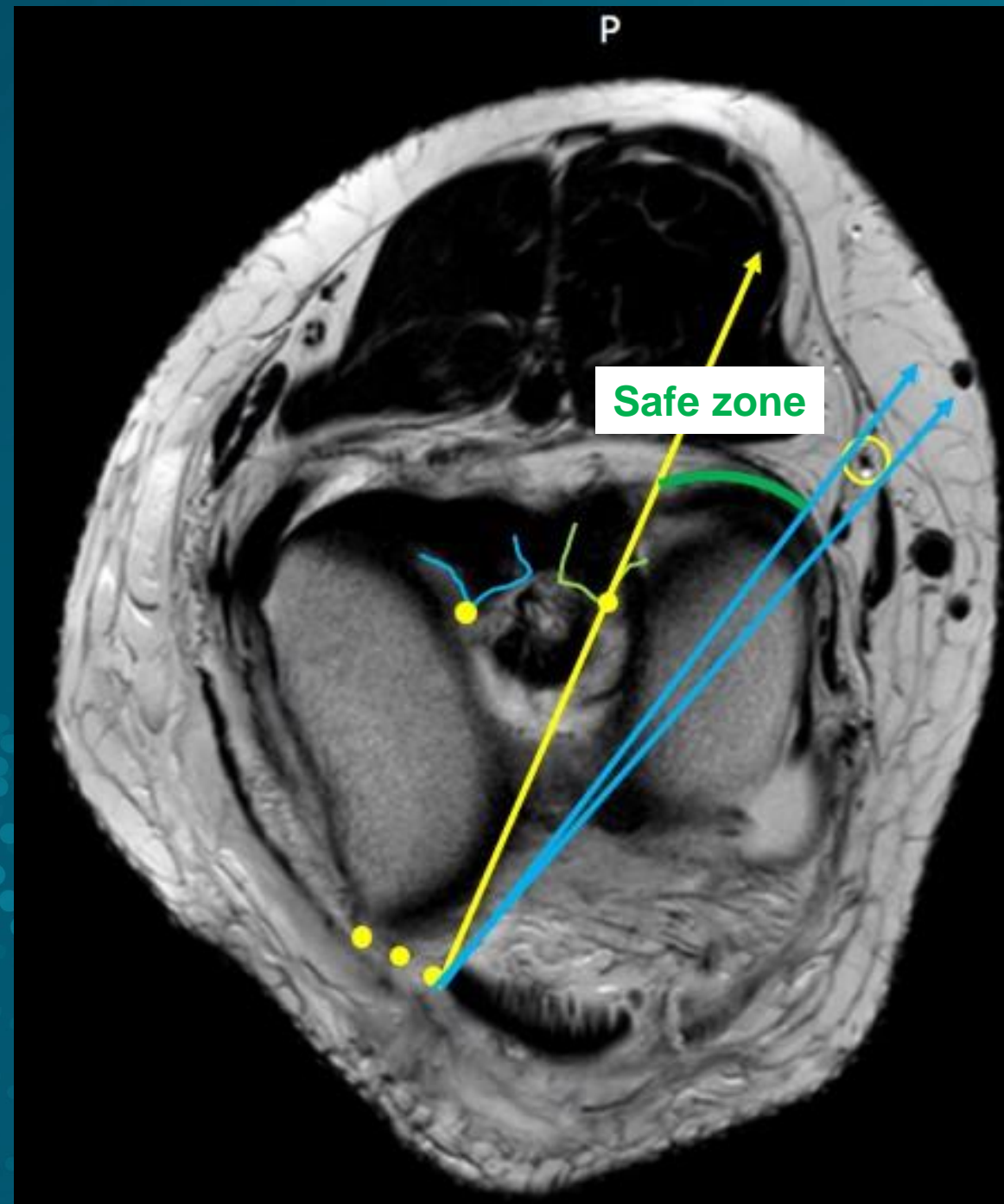


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Methods (Identify structures)



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Results

safe zone									
portal	meniscus root	valgus				pre-op			
		min	mean	sd	max	min	mean	sd	max
AM	medial root	13.15	28.12	6.232	39.14	17.73	28	6.861	43.79
AM 5mm	medial root	15.28	29.69	6.348	42.26	19.75	29.32	6.641	45.37
AM 10mm	medial root	16.36	31.47	6.693	43.85	20.77	30.96	6.577	46.4
AL	medial root	0	15.29	7.392	28.1	4.06	15.99	7.366	31.45
AL 5mm	medial root	0	13.33	7.089	25.75	1.87	13.08	7.787	28.07
AL 10mm	medial root	0	11.08	7.082	24.39	0	9.54	7.714	26.51
AL	lateral root	11	21.96	4.765	31	8	17.32	5.491	27
AL 5mm	lateral root	9	19.57	4.654	29	5	14.75	5.841	25
AL 10mm	lateral root	6	16.82	4.823	26	2	11.75	6.065	22



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Discussion

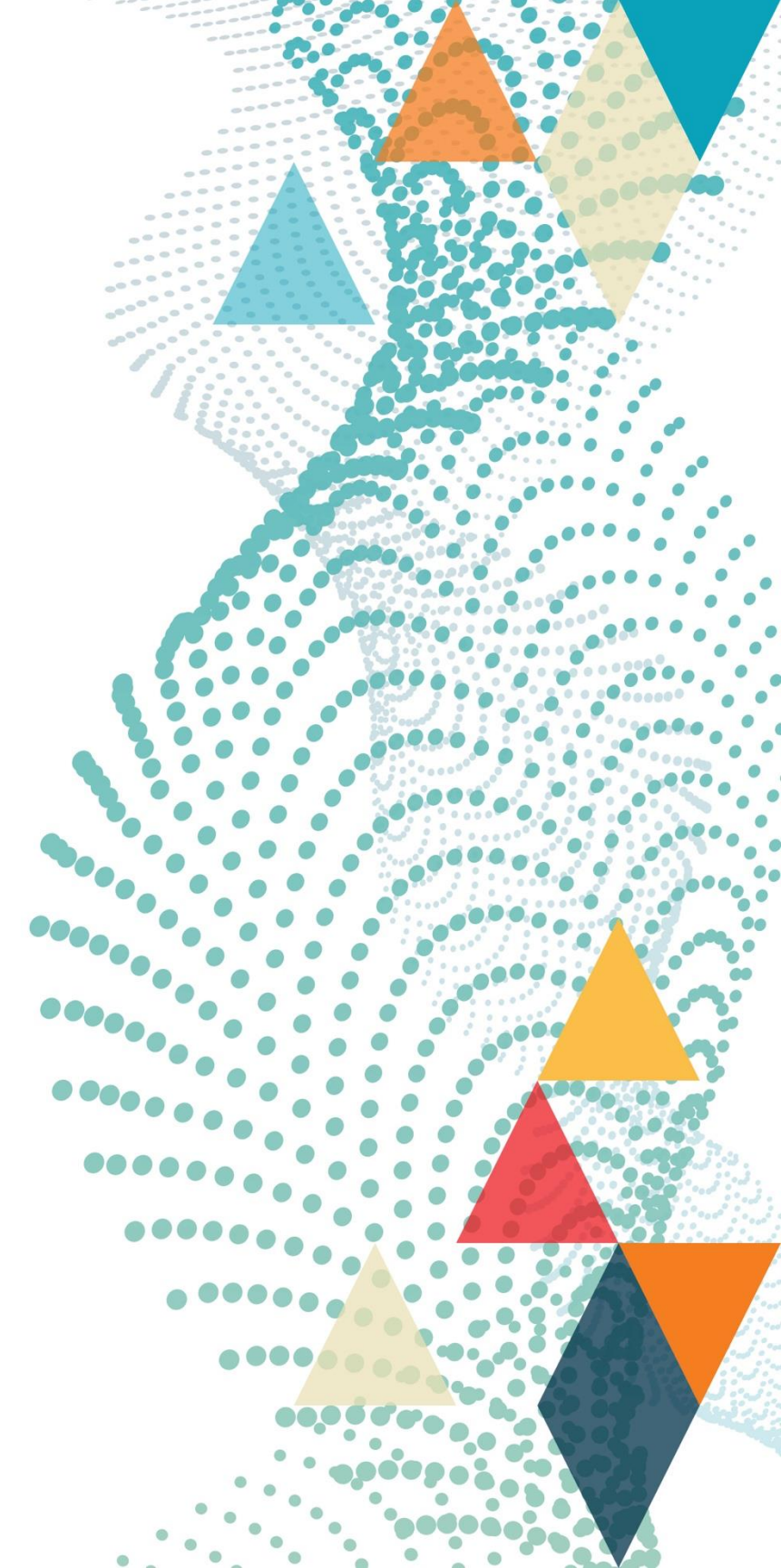
The safe zone identified on preoperative MRI differed from the actual safe zone observed during arthroscopic medial meniscal repair.



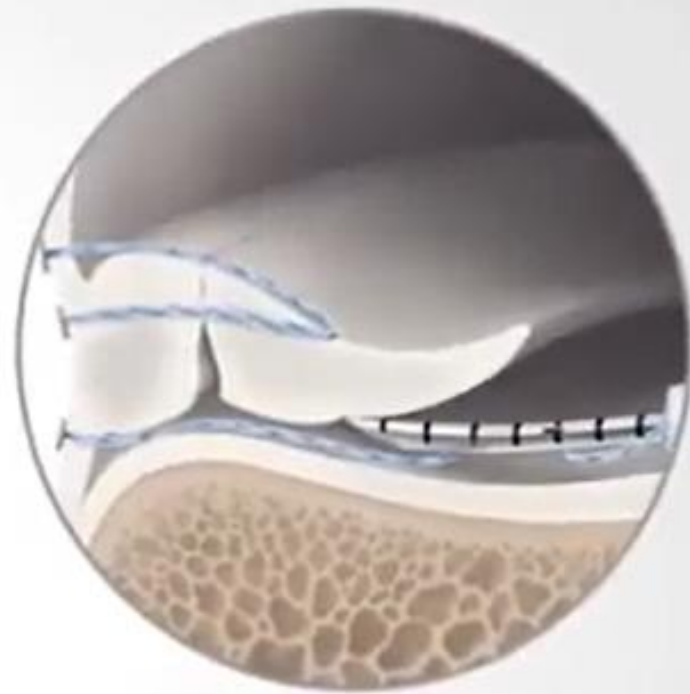
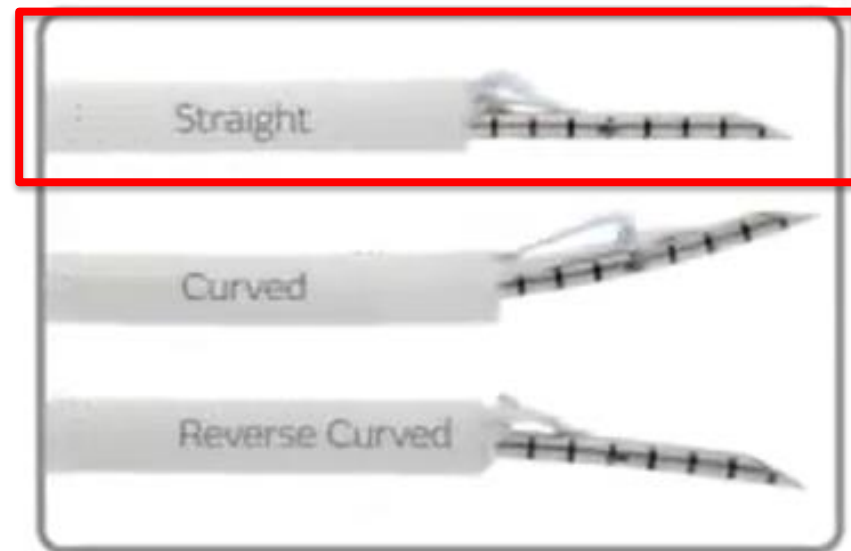
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Limitations



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Conclusions

Preoperative MRI cannot be used to accurately determine the true risk of neurovascular injury during medial meniscal repair.



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