

BSIR ASM 2020

ESSAY SCHOLARSHIP

Title 2: Submit an IR case that you have found interesting and explain why it has had an impact on you or a patient.

Word count (excluding references): 499

Tymoteusz Turlejski

Foundation Year 2 doctor

Affiliation: Royal Berkshire NHS Foundation Trust

'You know what it's like to wake up in the morning and not be able to walk? [...] All day your life is miserable.'

Patient PT

Introduction

The single most exciting aspect of Interventional Radiology is the opportunity to pioneer treatments tailored to patients' symptoms that transform their everyday lives. I had the privilege to witness the impact of patient-centred approach and scientific rigour on PT, a 78-year-old gentleman enrolled in GENESIS at Royal Berkshire Hospital - the first prospective European study investigating genicular artery embolisation (GAE) for knee osteoarthritis.

Patient's journey

PT started noticing severe, sharp pain in his right knee after unloading luggage from his car. The 10/10 pain and swelling persisted for months despite analgesia and physiotherapy. MRI revealed moderate degenerative changes of the medial tibiofemoral compartment. After discussing arthroplasty, steroid injection or being involved in the GENESIS study, he opted for GAE.

GAE rationale

GAE is a novel, minimally-invasive day-case procedure with emerging evidence to show that it reduces pain in patients with mild-to-moderate knee osteoarthritis (1-4). By reducing blood flow to areas of chronic inflammation, GAE is hypothesised to minimise formation of new blood vessels, which contribute to pain by proliferating into joint tissues and promoting sensory nerve growth (1).

Intervention

An antegrade 4 French sheath was inserted to the right common femoral artery. An angiogram showed hyperaemia in medial joint capsule. The lateral branch of the descending genicular artery was selectively catheterised with a microcatheter (Figure 1c). A cone-beam CT identified no significant skin branches from the catheterised artery. 4.5mls of diluted 100-300micron Embosphere particles considerably reduced hyperaemia without occluding the supplying arteries (Figure 1d).

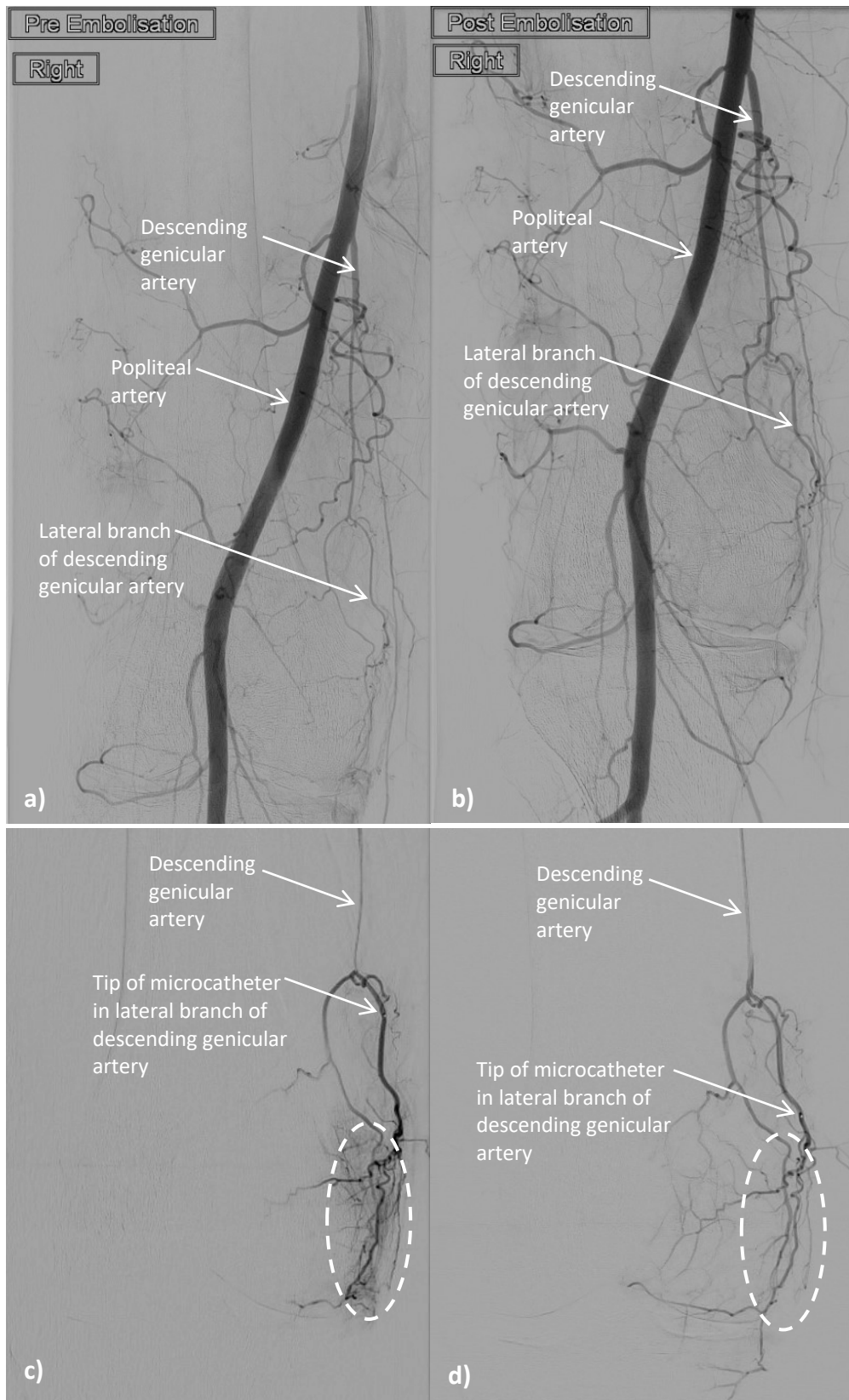


Figure 1. Digital subtraction angiogram pre-embolisation (a,c) and post-embolisation (b,d) of lateral branch of right descending genicular artery. Note reduced area of hypervascularity in medial joint capsule post-GAE (dashed line).

Impact

PT noticed 40% pain reduction days after GAE and a further gradual improvement in pain and swelling over 4 months. Before the procedure he used a walking stick and was limited to a 100 metre walk due to 10/10 pain. 8 months post-op, he enjoys long walks without mobility aids, rating his pain as 1/10. PT highlighted his everyday struggles:

'You're facing pain every 5 minutes whenever you move [...]. I used to have pain when I was sleeping, it would wake me up. Now, I do not. And I do not have pain when I'm sitting on the toilet. And when I'm putting my trousers on. That's very important.'

Conclusion

The tangible effect of a novel intervention on PT's life made me appreciate the importance of comprehensive quality of life assessment when explaining treatment options and designing research protocols. It inspired me to pursue research into minimally-invasive therapies, which emerge as cost-effective alternatives to operations like arthroplasties by offering shorter recovery and waiting times. PT emphasised the significance of trust – built on clear communication, empathy and shared decision-making. His story will remind me to champion these values in my career as a clinician and an academic.

References

- 1) Okuno, Y., Korchi, A., Shinjo, T. and Kato, S., 2015. Transcatheter Arterial Embolization as a Treatment for Medial Knee Pain in Patients with Mild to Moderate Osteoarthritis. *CardioVascular and Interventional Radiology*, 38(2), pp.336-343.
- 2) Okuno, Y., Korchi, A., Shinjo, T., Kato, S. and Kaneko, T., 2017. Midterm Clinical Outcomes and MR Imaging Changes after Transcatheter Arterial Embolization as a Treatment for Mild to Moderate Radiographic Knee Osteoarthritis Resistant to Conservative Treatment. *Journal of Vascular and Interventional Radiology*, 28(7), pp.995-1002.
- 3) Lee, S., Hwang, J., Kim, D., So, Y., Park, J., Cho, S., Kim, J., Kim, Y., Hur, S. and Jae, H., 2019. Clinical Outcomes of Transcatheter Arterial Embolisation for Chronic Knee Pain: Mild-to-Moderate Versus Severe Knee Osteoarthritis. *CardioVascular and Interventional Radiology*, 42(11), pp.1530-1536.
- 4) Bagla, S., Piechowiak, R., Hartman, T., Orlando, J., Del Gaizo, D. and Isaacson, A., 2020. Genicular Artery Embolization for the Treatment of Knee Pain Secondary to Osteoarthritis. *Journal of Vascular and Interventional Radiology*, 31(7), pp.1096-1102.

Permission to use images and interview quotes was obtained from the patient.

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