Extracorporeal Shockwave Therapy (ESWT) for Management of Persistent Ruptured Baker's Cyst: A Case Report

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Case Diagnosis

Ruptured hemorrhagic Baker's cyst

Case Description

- A 74-year-old man presented to clinic 4 weeks after a fall onto his anterior right knee with persistent posterior right leg pain when walking (Visual Analog Scale (VAS) 4).
- Past medical history was notable for peripheral vascular disease, not on anticoagulation.

Physical Examination

- Right lower leg with skin hyperpigmentation and maximum circumference 40.5 cm
- Maximum left lower leg circumference 36.5 cm
- Tenderness to palpation over right popliteal fossa and upper calf



Ultrasound Imaging

- 14.9 x 4.9 x 1.9 cm (volume: 139 cm³) ruptured hemorrhagic Baker's cyst
- Negative for venous thrombosis

Case Description (continued)

• ESWT was considered due to patient's functional impairment, chronicity of the lesion, and risk in performing invasive procedures such as aspiration in an elderly patient during the COVID-19 pandemic.

Intervention

• Two sessions of low-intensity combined focused and radial ESWT applied over the fluid collection

Session 1 (4 weeks after symptom onset)

- Focused ESWT for 1000 shocks titrated to 0.12 mJ
- Radial ESWT for 3000 counts at 2.0 bars of air pressure and 15 Hz frequency
 - No change in pain post-procedure (VAS 4)
 - Maximum right lower leg circumference decreased from 40.5 to 39.0 cm.



Figure. Ultrasound images of ruptured hemorrhagic Baker's cyst at 4 weeks and 6 weeks after symptom onset.

Session 2 (5 weeks after symptom onset)

- Radial ESWT for 6000 counts at 2.0 bars of air pressure and 15 Hz frequency
 - Resolution of pain immediately post-procedure (VAS 4 to VAS 0)

Follow Up (6 weeks after symptom onset)

- He reported no pain (VAS 0) after second ESWT session with walking at his normal pace for up to 45 minutes daily.
- Maximum right lower leg circumference was 39.7 cm.
- Repeat ultrasound imaging showed decrease in fluid collection size to 7.0 x 4.7 x 1.8 cm (volume: 59.2 cm³).



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Discussion

- Rupture is the most common complication of Baker's cysts.¹
- It is expected to resolve spontaneously over weeks with leg compression and elevation.²
- Fluid aspiration and surgical intervention are typically reserved for complications, such as infection and compartment syndrome, or chronic functional impairment.²
- ESWT has been shown in pilot studies to reduce lymphedema volume in breast cancer patients, possibly secondary to lymphangiogenesis, improved lymphatic drainage, and reduced inflammation.³
- A similar mechanism of action may explain the volume reduction and pain improvement seen in this case report.

Conclusions

- To our knowledge, no previous literature has been reported on ESWT for treatment of ruptured Baker's cysts.
- ESWT may be considered for patients with persistently symptomatic ruptured Baker's cysts.

References

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