Canadian Association of Radiologists
L'Association canadienne des radiologistes

Hepatic artery pseudoaneurysm embolization

AP005

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Canadian Association of Radiologists 80th Annual Scientific Meeting
Departmental Clinical Audit Contest
Friday April 21st, 2017 at 9:40 am

Conflicts of Interest

- None to disclose.

Outline

- Principle Location of Audit
- Background and Aim
- Audit Target
- Methods
- Results
- Interventions / Action Plan
- Discussion / Conclusions

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- Diagnostic imaging department at a university-affiliated urban hospital

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- 24-hour interventional radiology coverage at all three sites

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  - Greater incidence than splenic artery aneurysms
- Account for 39% of all visceral artery pseudoaneurysms [2]
- Most commonly related to percutaneous biliary intervention [3]
  - Other causes: anastomotic rupture post liver transplant, trauma, pancreatitis, other inflammatory processes

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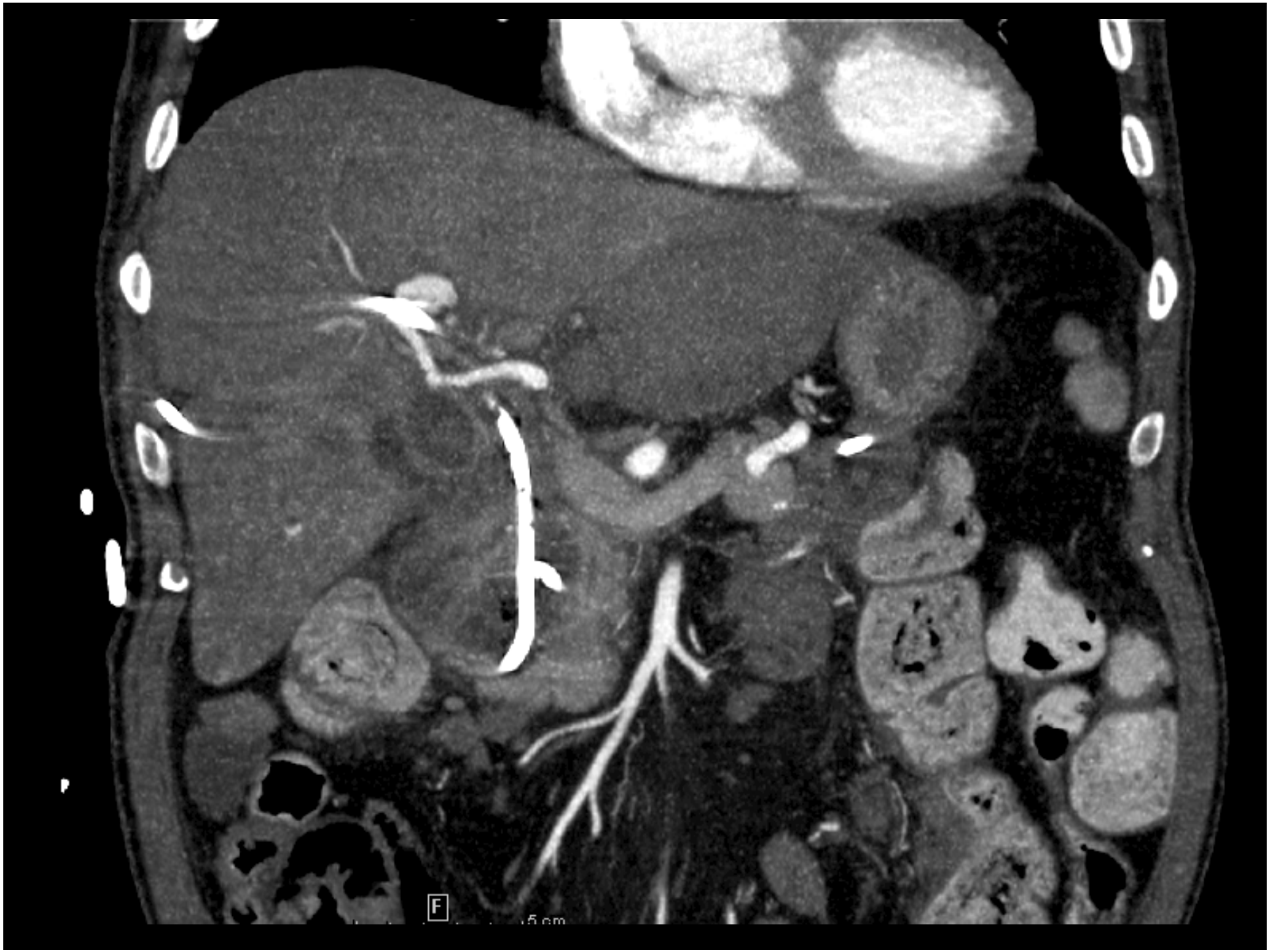
- Typically diagnosed by CTA
- Conventional angiography, previously the gold standard, now primarily used when treatment is indicated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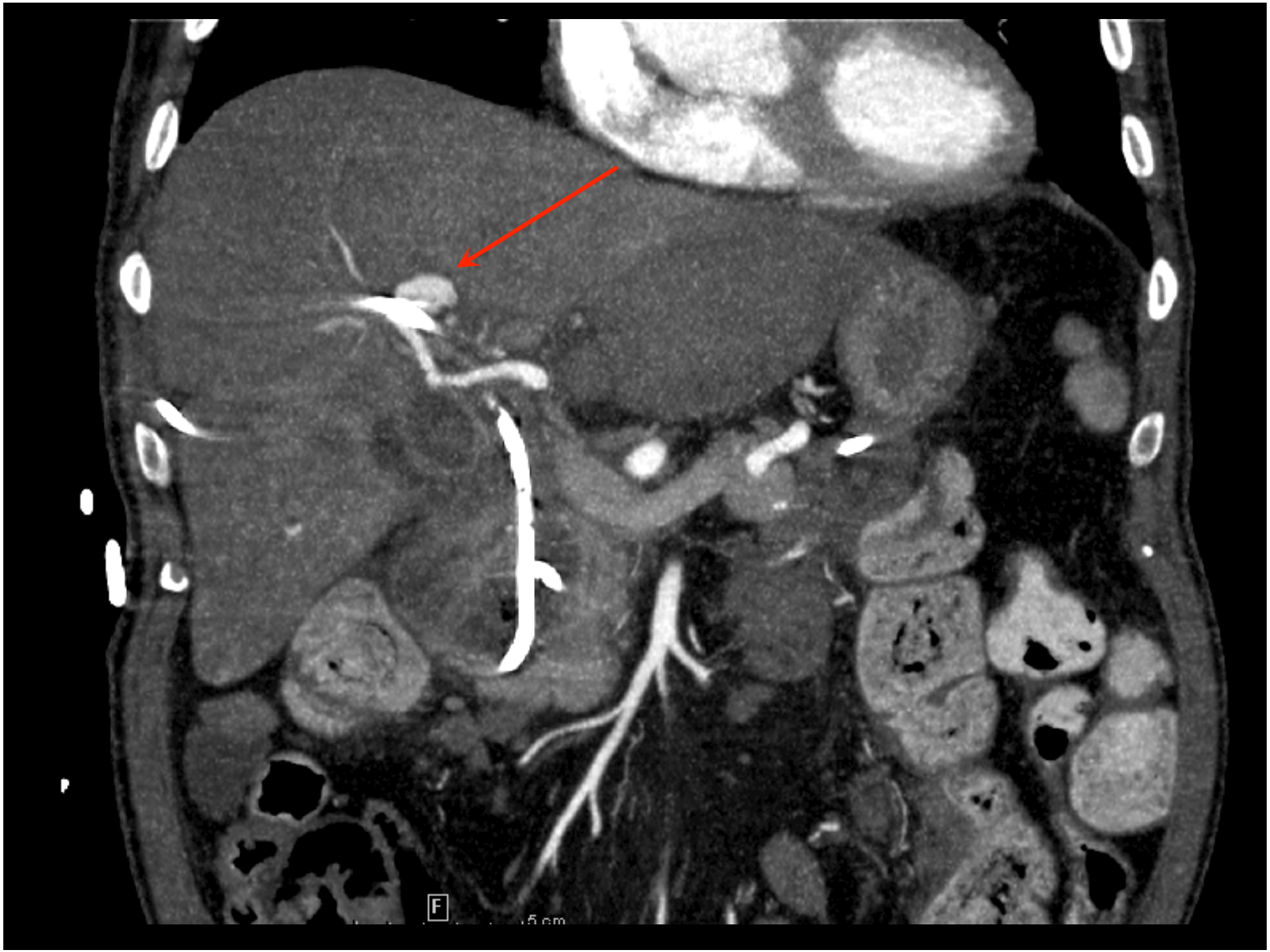

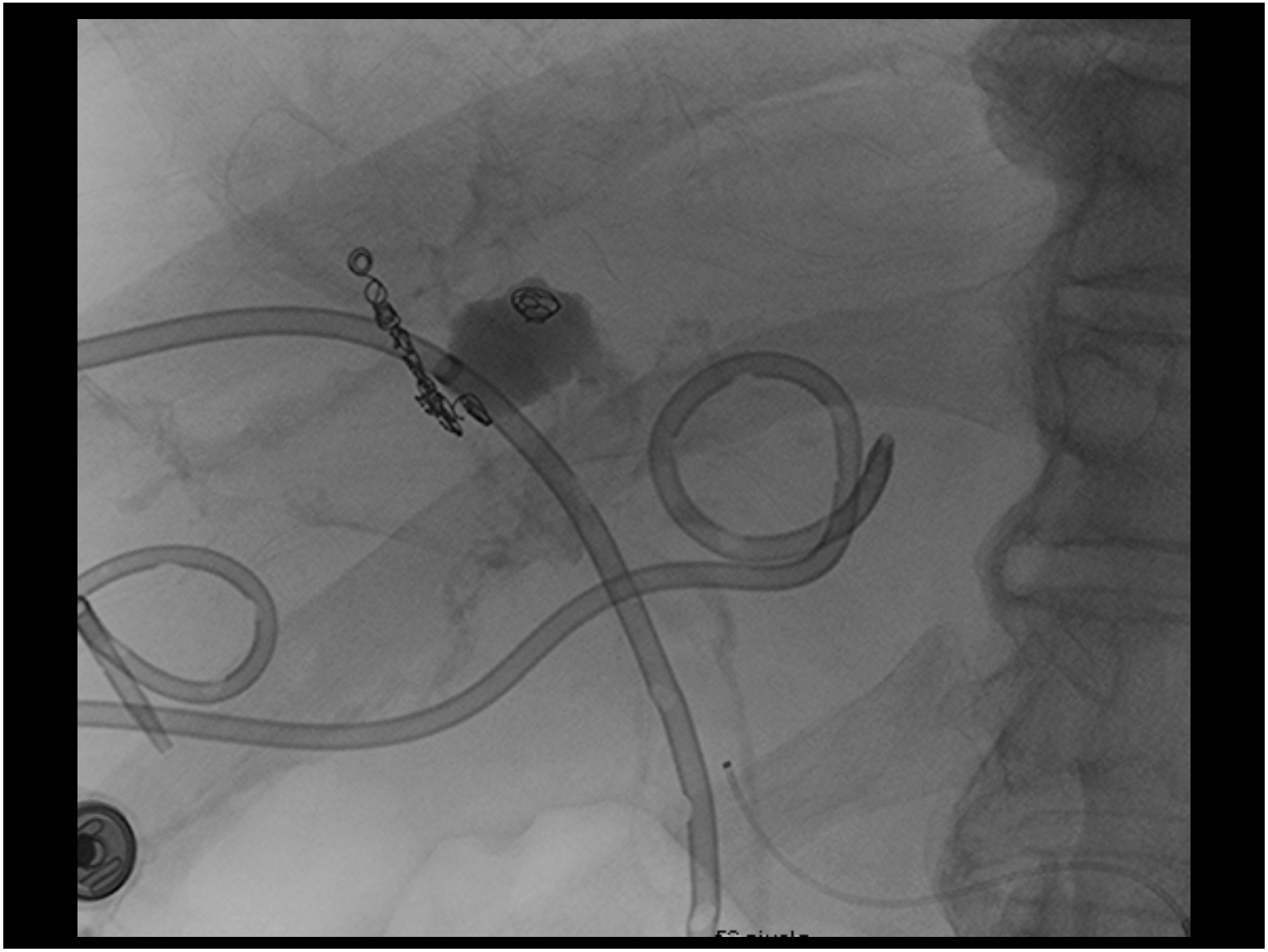

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- Open surgical ligation: 21% mortality rate [1]
- Transcatheter embolization being used increasingly for management to improve outcomes [6]

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- Use of multilayer flow-diverting bare stent also reported [9]

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- This data is important to ensure a high standard of care at our centre

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- Comparison will be made to results in the literature

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- Clinical notes, imaging, and procedure reports reviewed
  - Demographics, pseudoaneurysm characteristics, underlying cause, technical success, 30-day mortality

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  - Technical success: as high as 100% [10]

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- 30-day mortality rate: 9.1%
- Both audit targets were achieved

Results (cont'd)

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  - Treated with coil embolization with technical success
  - Died 16 days post-procedure as a result of liver failure, intra-abdominal sepsis, and eventual hemodynamic decompensation

Results (cont'd)

UNDERLYING CAUSE	NUMBER OF CASES (PERCENT)
Surgery	4 (36.4%)
Biliary Intervention	3 (27.3%)
Trauma	2 (18.2%)
Duodenal ulcer	1 (9.1%)
Suspected vasculopathy	1 (9.1%)

Results (cont'd)

LOCATION	NUMBER OF CASES (PERCENT)
Branch of right hepatic artery	4 (36.4%)
Right hepatic artery	3 (27.3%)
Left hepatic artery	1 (9.1%)
Cystic artery	1 (9.1%)
Proper hepatic artery	1 (9.1%)
Multiple, including the common hepatic artery	1 (9.1%)

Results (cont'd)

EMBOLIC AGENT	NUMBER OF CASES (PERCENT)
Coils alone	6 (54.5%)
Coils and thrombin	3 (27.3%)
Coils and PVA particles	1 (9.1%)
Stent graft	1 (9.1%)

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- No current consensus guidelines in the literature
  - May be proposed to the Society of Interventional Radiology

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- Our results suggest that HAPA embolization is being performed safely and effectively at our institution
- Regular audits are necessary to ensure quality of care for patients undergoing urgent embolization procedures

Acknowledgments

- Dr. George Markose (audit supervisor)
- Hepatobiliary surgery team
- Cheryl Livingston, Diagnostic Services Manager
- Charles Meli, Senior IR Technologist

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