

THROMBIN EMBOLIZATION FOR ARTERIAL PSEUDOANEURYSM TREATMENT

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INTRODUCTION

Pseudoaneurysm or *false aneurysm* is a collection of blood that forms when blood escapes from the lumen of an artery through a defect in one or more layers of the arterial wall.

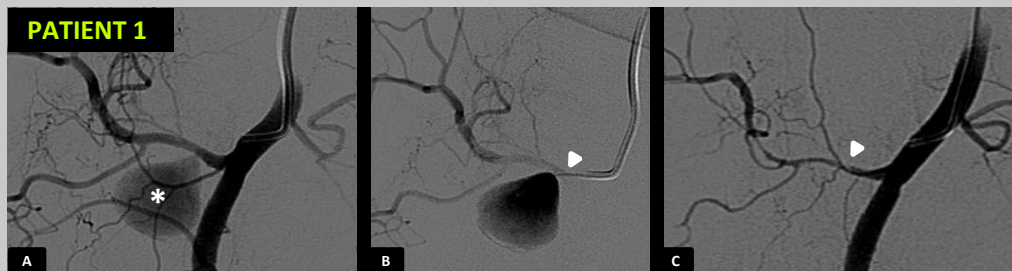
Treatment includes:

- percutaneous ultrasound guided thrombin injection for peripheral pseudoaneurysms found at extremities.
- endovascular treatment (covered stents / coil embolization) for visceral pseudoaneurysms.

Fluoroscopy guided thrombin embolization is not the preferred method due to the risk of thrombin migration.

The current report shows our experience with thrombin embolization in two challenging cases.

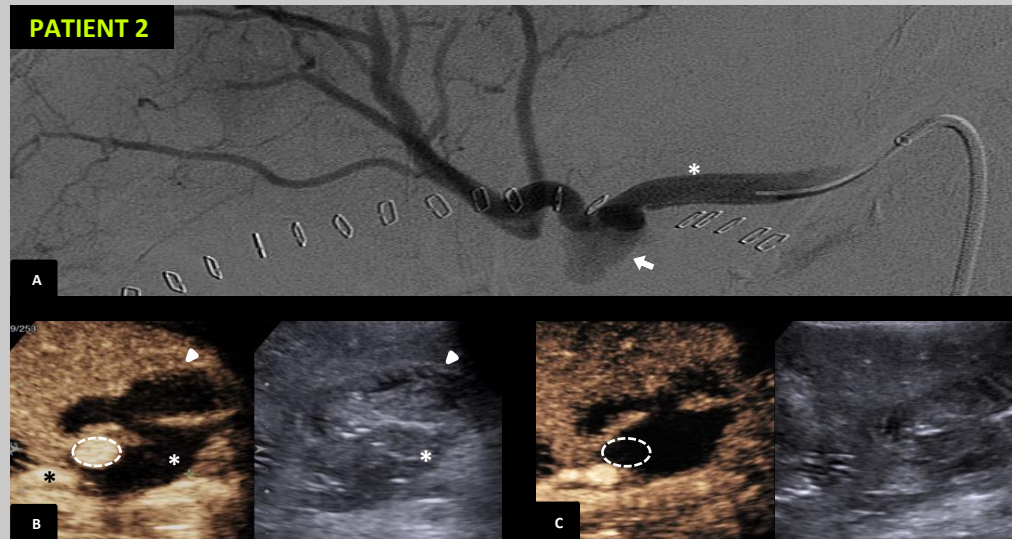
PATIENT 1



71-years-old obese female with pseudoaneurysm depending on the medial circumflex femoral artery after catheter ablation for atrial fibrillation.

- A. Right lower extremity arteriography confirmed the presence of the pseudoaneurysm (asterisk).
B. Selective arteriography from the microcatheter (arrowhead) positioned in the lumen of the pseudoaneurysm.
C. Arteriography after thrombin embolization with some vasospasm (arrowhead).

PATIENT 2



74-years-old male with gastroduodenal artery pseudoaneurysm after whipple procedure.

- A. Hepatic arteriography shows non-target implantation of covered stent (asterisk) and persistent pseudoaneurysm (arrow).
B. Enhanced ultrasound confirmed the persistence of the pseudoaneurysm (pointed line) depending on gastroduodenal artery (black asterisk). Grayscale ultrasound shows a surrounding hematoma (white asterisk) and a short segment of duodenum (arrowhead).
C. Successful radiological result on both enhanced (pointed line) and grayscale ultrasound after percutaneous thrombin injection.

OUTCOMES

The patient with visceral pseudoaneurysm died 3 weeks after embolization due to abdominal sepsis and respiratory failure.

The other patient developed localized pain during following 2 weeks, controlled with oral painkillers (AINES), with no evidence of reappearing pseudoaneurysm (10 months follow-up).

CONCLUSIONS

Peripheral pseudoaneurysms can be embolized with fluoroscopy guidance if ultrasound limitations are present.

We should consider ultrasound guidance for visceral pseudoaneurysms when there is unfavorable vascular anatomy or endovascular approach has failed.