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DEPARTMENT OF SURGERY
KHONKAEN UNIVERSITY

Venous aneurysms When to intervention

SUPATCHA PRASERTCHAROENSUK

NARONCHAI WONGKONKITSIN

17/2/61 15.50-16.00 (10 MIN)

Outlines

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- Definition
- Risk factors
- Treatments

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Vascular access

Permanent hemodialysis access utilizing native veins

➔ Procedure of choice

- Lower rates of Infection
- Lower rates of Thrombosis

Vasc Endovascular Surg 2007;41:55-60.
J Vasc Surg 2011;53:1291-7.

1/3 of all AVFs develop complications

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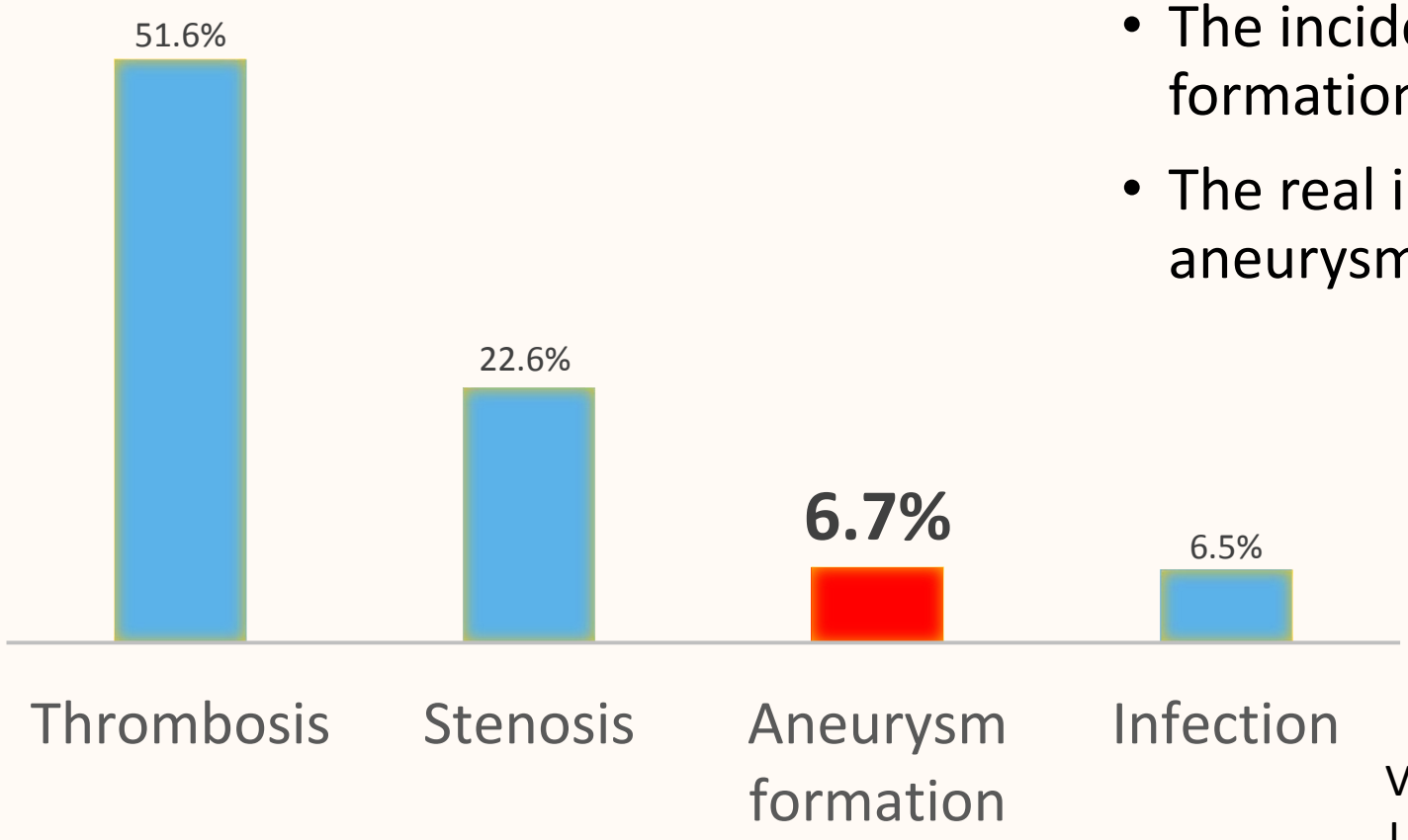

- The incidence of aneurysm formation : 5-7%
- The real incidence of true aneurysms is unknown

Vasc Endovascular Surg 2007;41:55-60.
J Vasc Surg 2011;53:1291-7.
Ann Acad Med Singapore 2007;36:851-3.

Definition

- True aneurysm of the outflow vein defined as :

  → A dilatation **> 3 times** of native vessel diameter

- The reference segment for “normal diameter” measurement :

  → not include stenotic areas before or after aneurysms

Ann Acad Med Singapore 2007;36:851-3.

1 study in Arizona

- 29 venous aneurysms
- Average size → 3.3 cm
- Mean time (creation→ treatment) → 47.1 mo
- Mean flow in AVF : 1288 mL/min
- Mean flow in high output CHF : 2500 mL/min

What’s the risk factors?

Risk factors

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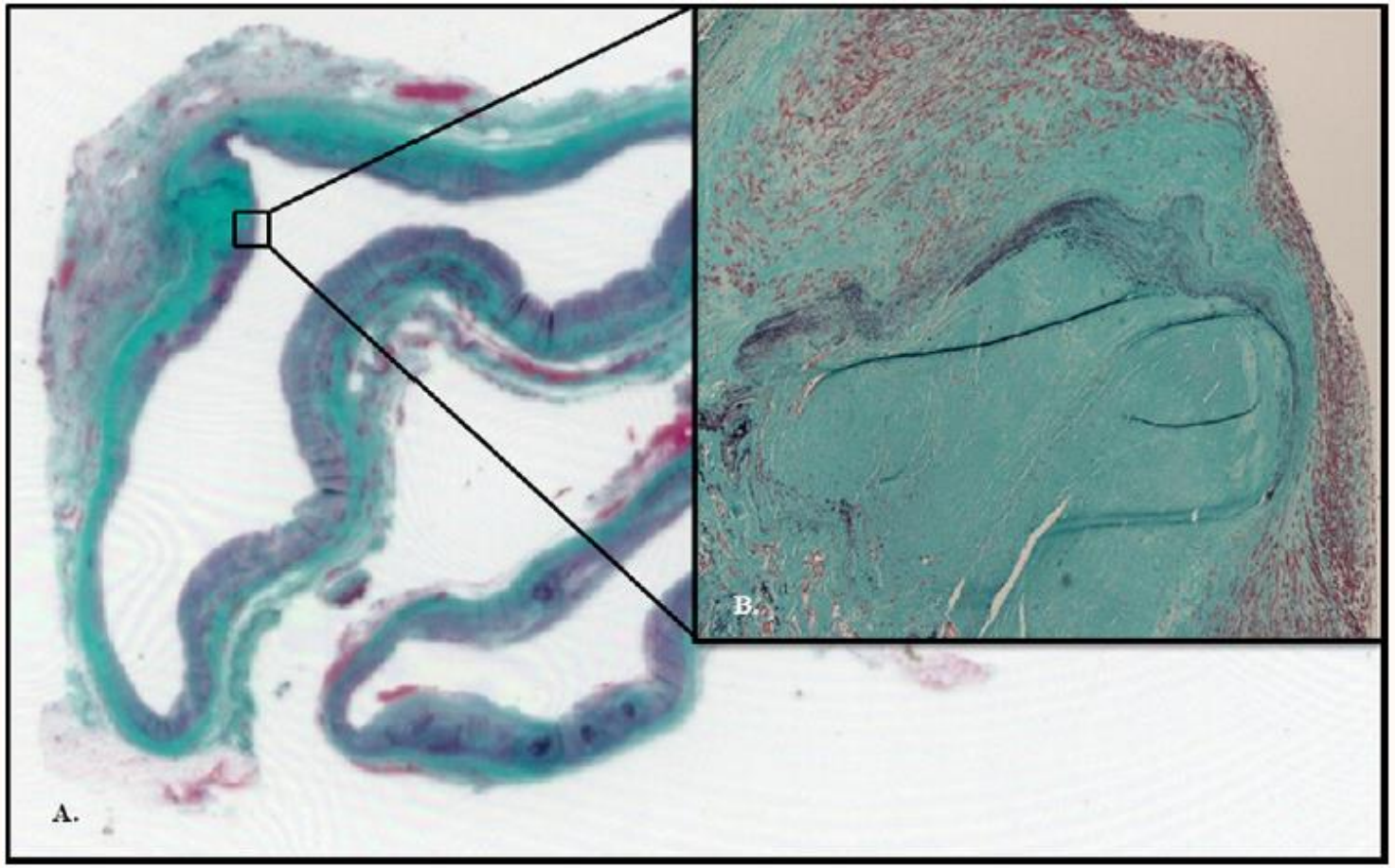
- Punctures at clustered sites → progressively weaken venous wall
- High turbulent flow over a long time in combination with weakness of the vein wall
- Varicosities
- Central or outflow vein stenosis

J Cardiovasc Surg (Torino) 1990;31:668-71.
Ann Vasc Surg 2004;18:747-9.
J Vasc Surg 2011;53:1291-7.)

Should we cannulate venous aneurysm?

Pathologic examination of aneurysm wall



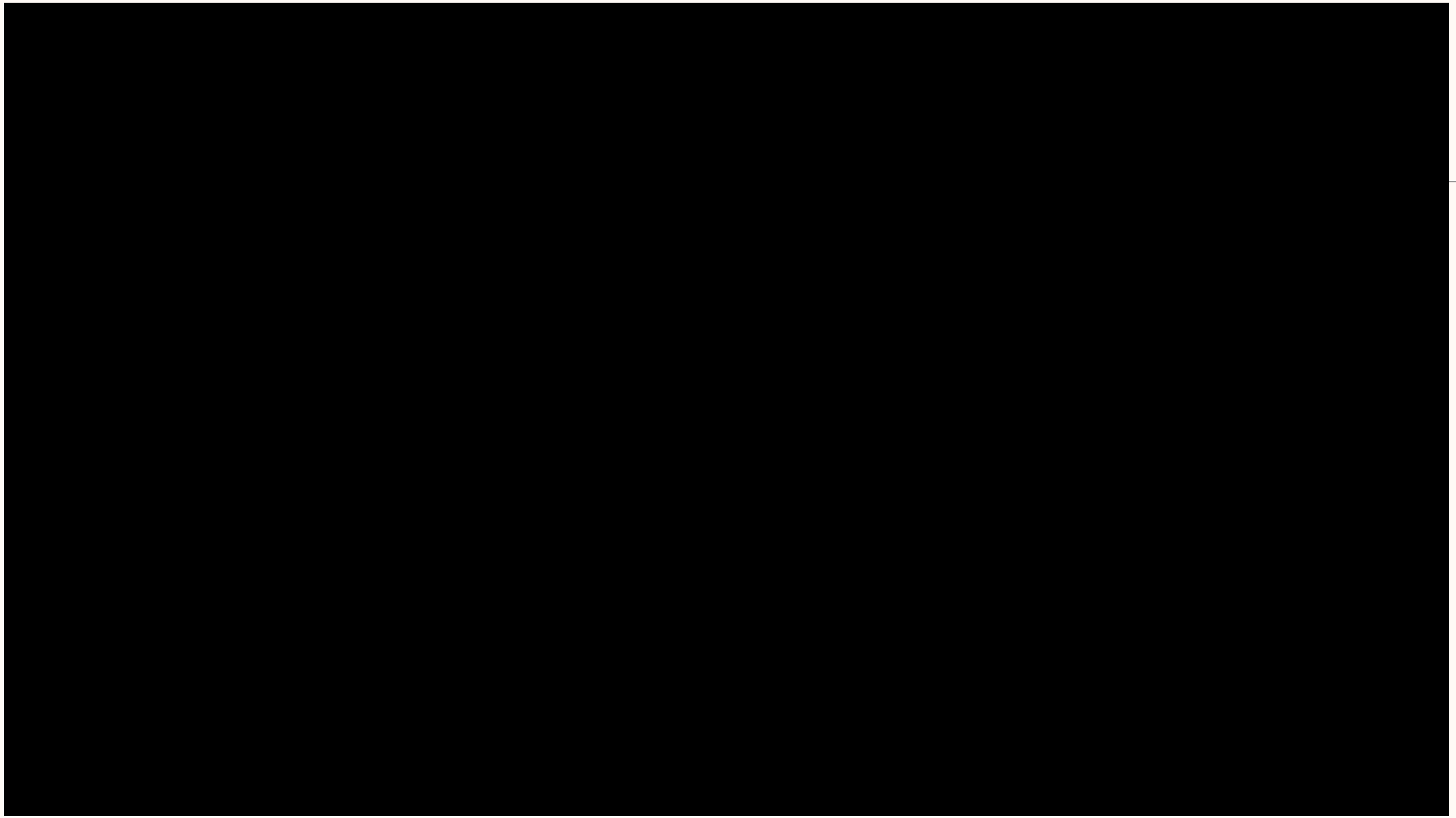
→ Thickening with extensive collagen infiltration → Unlikely spontaneous rupture unlikely

Should we cannulate venous aneurysm?

- AVF rupture may occur if aneurysmal segment is directly cannulated

- K-DOQI guidelines

  ➔ Abandoning cannulation at venous aneurysm segment



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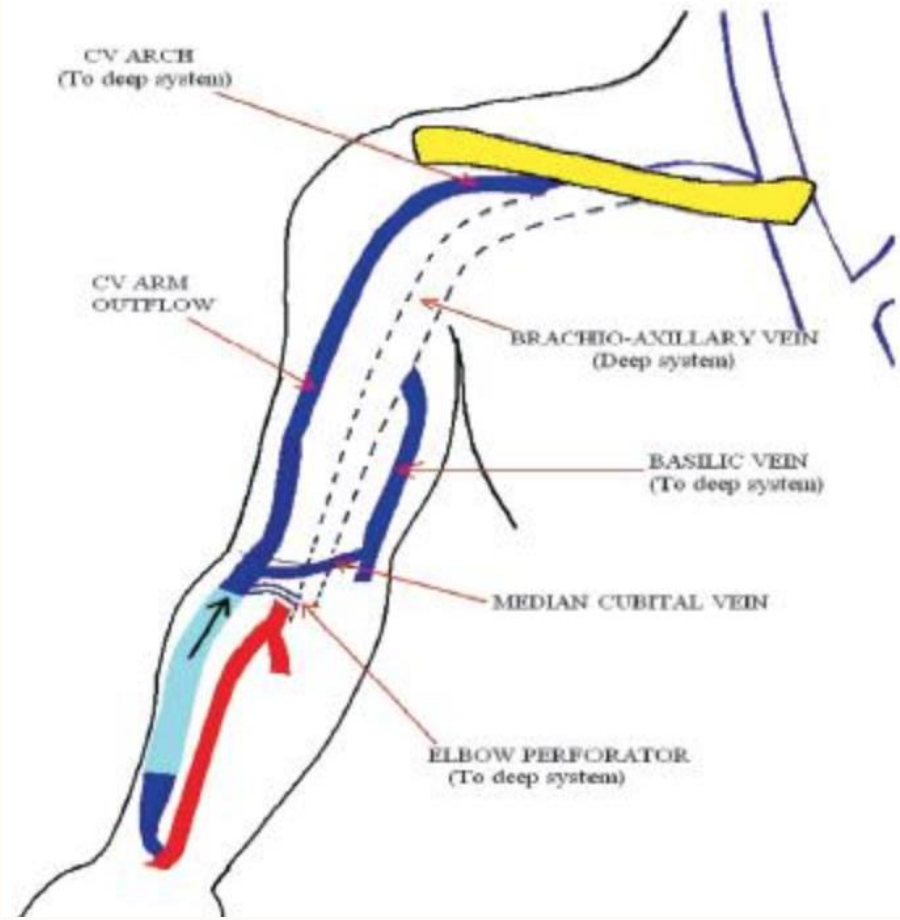
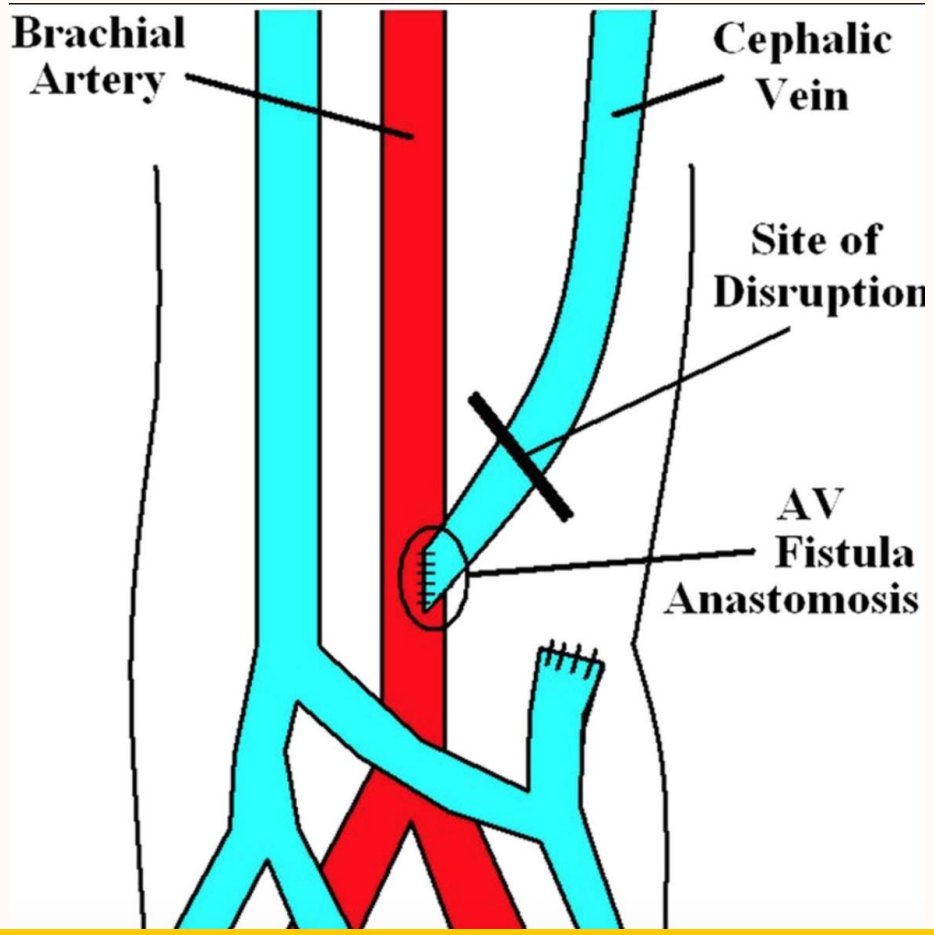
Where is the inflow?





The sequelae of VA

- Infection
- Skin breakdown
- Bleeding
- Rupture
- Thrombosis
- Poor flow resulting in inadequate dialysis

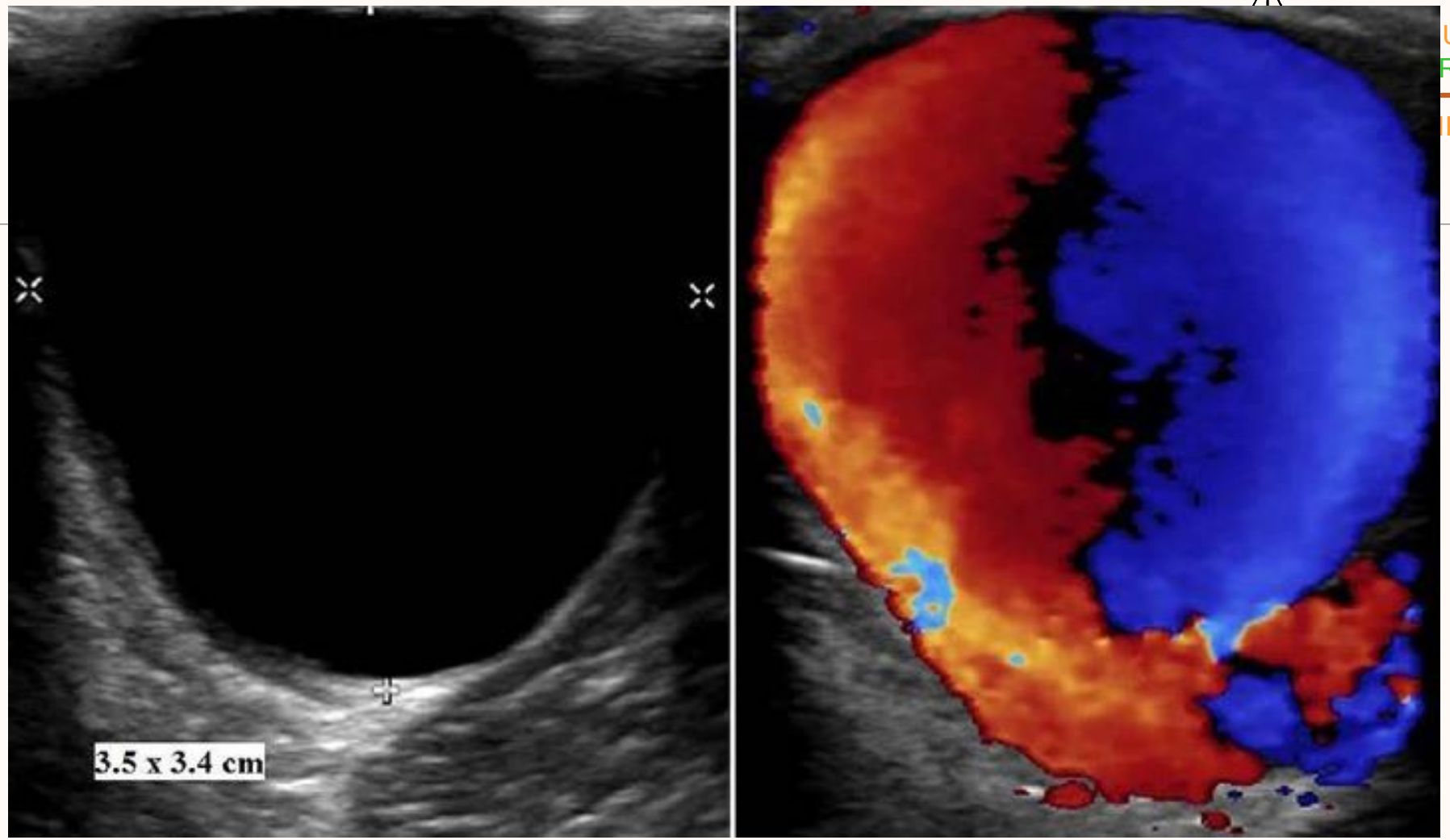
J Vasc Surg 2010;51:921-5.

When to consult?

Reasons for repairing aneurysms

1. Skin changes (thinning or erosion)
2. Inflammation
3. Pain
4. Thrombosis causing flow impediment venous hypertension
5. Shortened area of cannulation (as a consequence of the aneurysm presence)
6. Steal syndrome
7. High output congestive heart failure

J Vasc Surg 2011;53:1291-7.

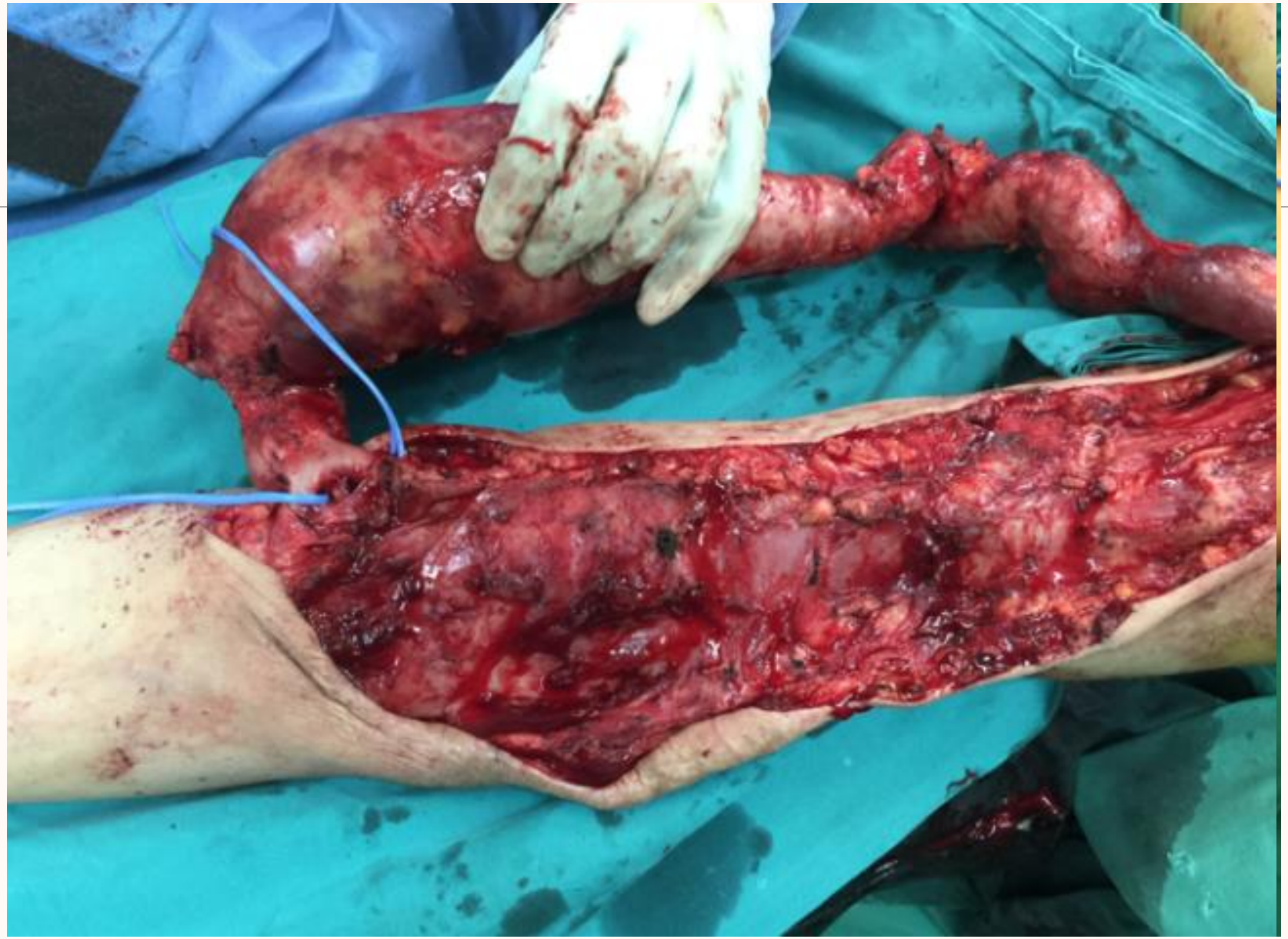


Typical cephalad and retrograde flow pattern

Treatment strategies

- Ligation
- Excision
- Surgical aneurysmorrhaphy (Partial aneurysmectomy)
- Prosthetic interposition
- Percutaneous stent grafts

Excision




A.
B.
C.
MEDLINE
D.

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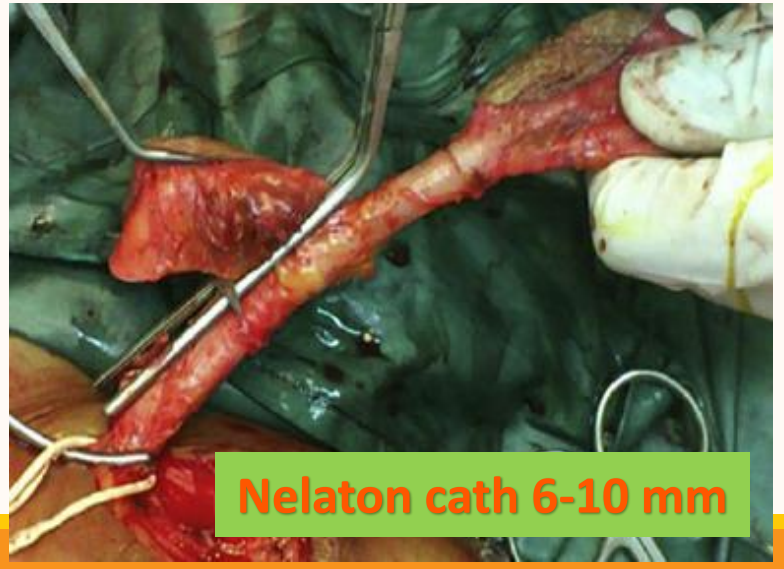
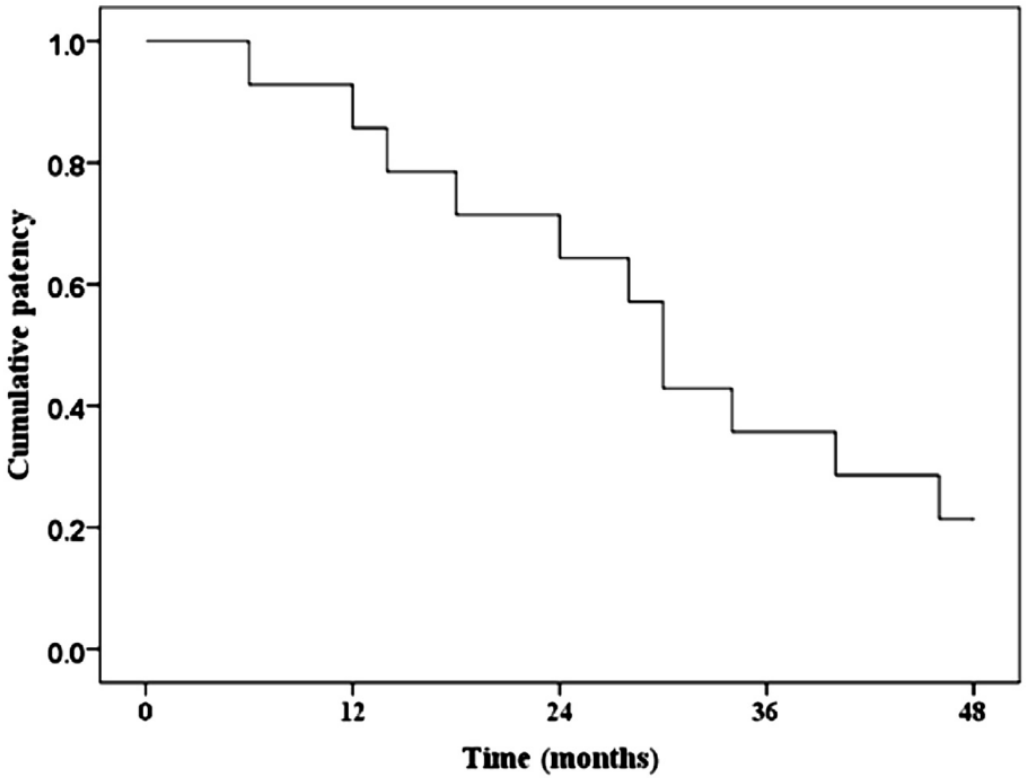
Partial aneurysmectomy



J Vasc Surg 2014;59:1073-7.

Partial aneurysmectomy



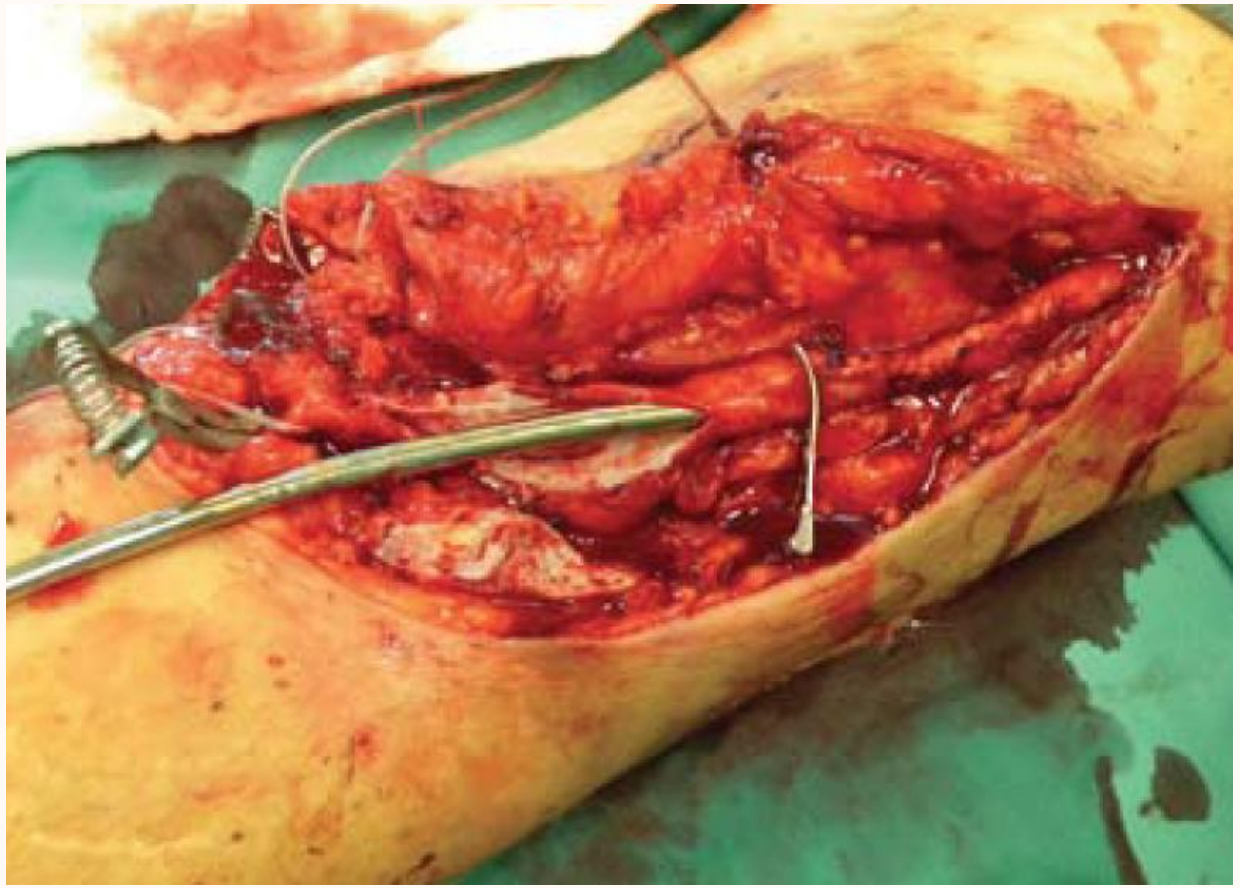
Time (months)	0	6	12	18	24	30	36	42	48
No. at risk	14	14	13	11	10	8	5	4	3
SE	.000	.068	.109	.120	.132	.128	.120	.109	.000

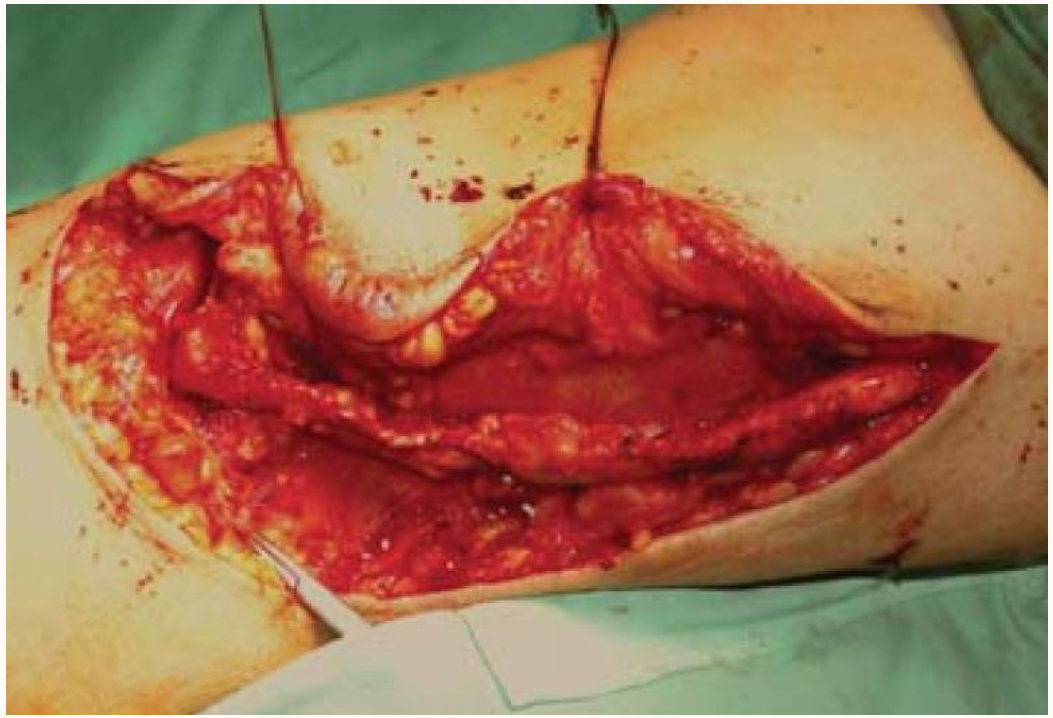
Fig 4. Kaplan-Meier analyses shows fistula patency after partial aneurysmectomy. *SE*, Standard error.

Mean patency after procedure of 30.4 ± 14.4 mo

J Vasc Surg 2014;59:1073-7.

Over Hegar 6 mm





Ann Acad Med Singapore 2011;40:136-9

Staple aneurysmorrhaphy

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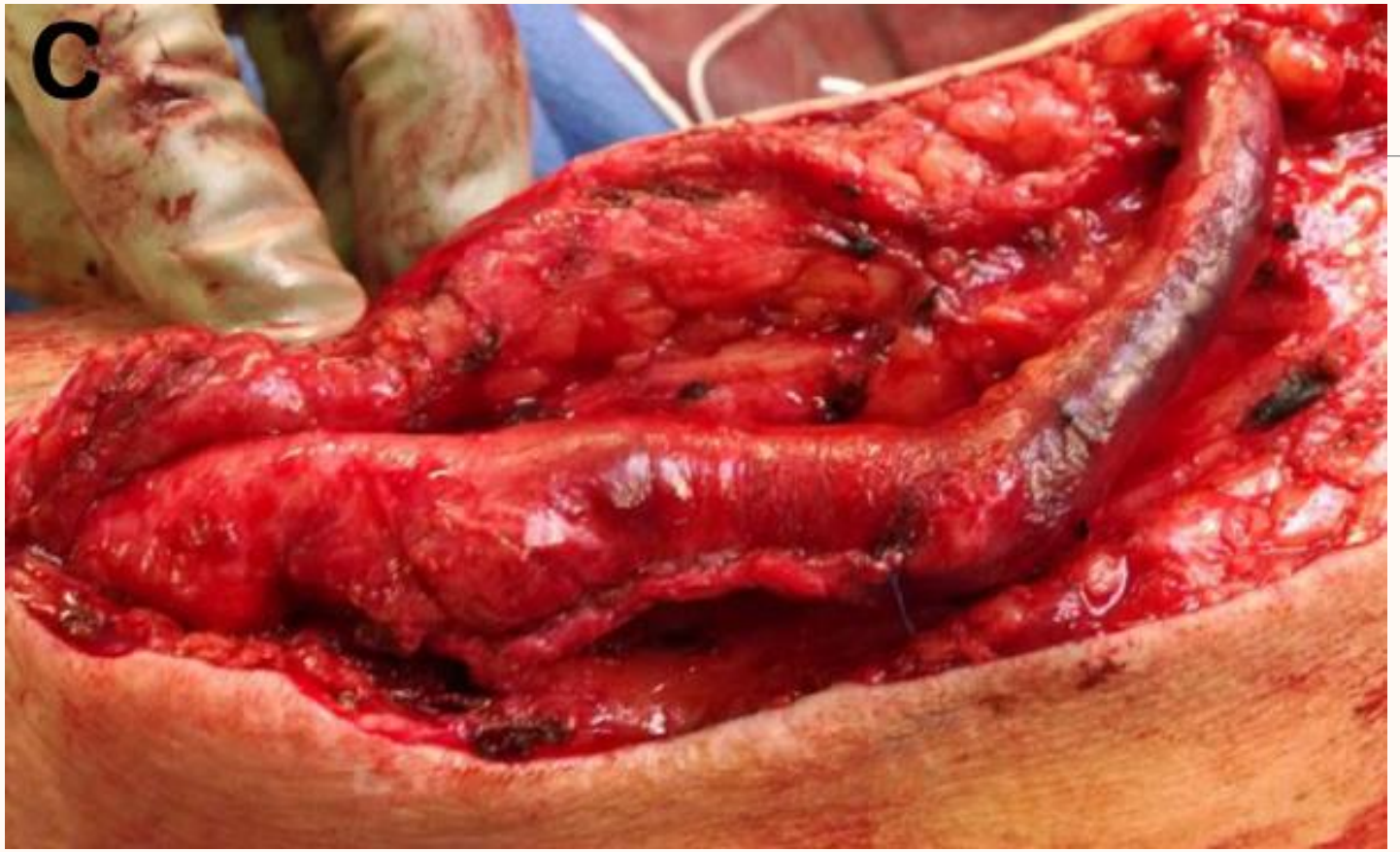
J Vasc Surg 2015;61:457-62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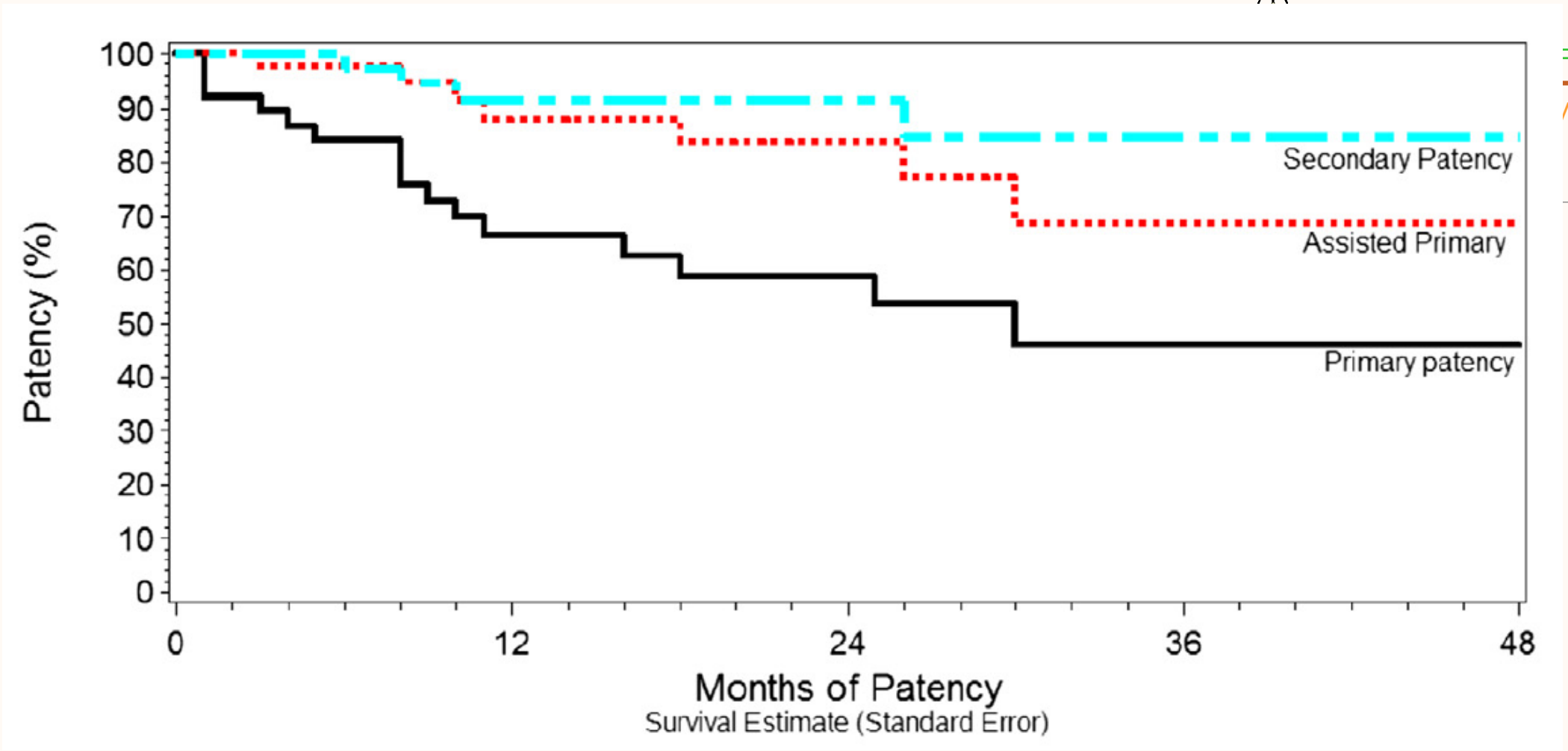
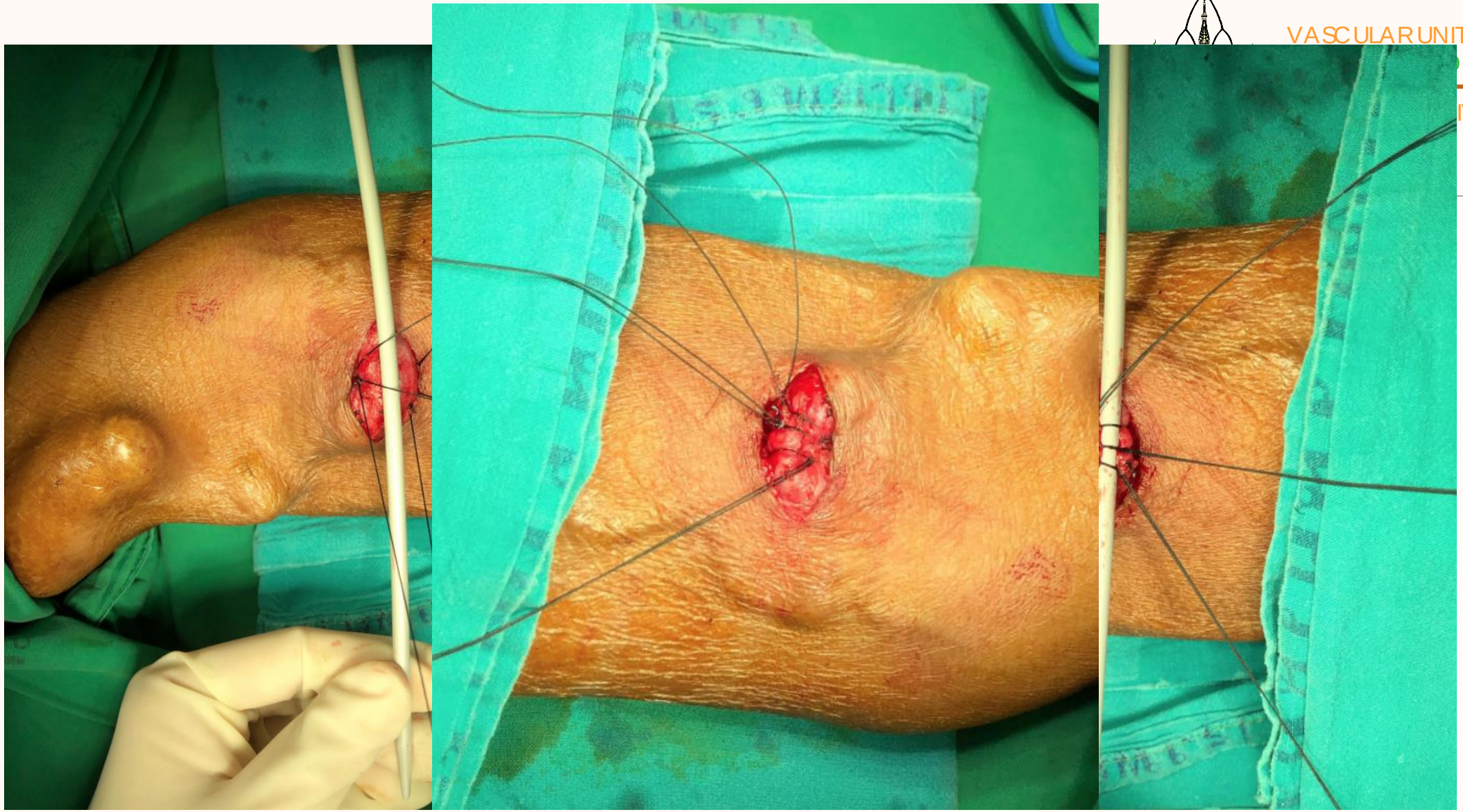


At 1 year, primary patency 67% , secondary patency 91%

At 3 years, primary patency 46%, secondary patency 85%

J Vasc Surg 2015;61:457-62



Banding in high flow with steal syndrome

Summary

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