

# Are There Solid Reasons to Consider Open Aneurysm Repair ?



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J.C. Parodi (1991)  
“endoprosthesis to  
exclude an aneurysm  
from the circulation”





## Endovascular repair for open or randomized

EVAR trial part II

**Summary**  
**Background** In patients of patients of EVAR improved

**Methods** We compared 5-5 cm in diameter either EVAR or open repair endpoints of hospital cost

**Findings** In 197 patients in the protocol. The group had a 42% of aneurysm repair; the EVAR group (p=0.25). There were UK£13 million no difference

**Interpretation** In aneurysm. In surveillance surveillance patients is a

# Two-Year Outcomes after Conventional or Endovascular Repair of Abdominal Aortic Aneurysms

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### ABSTRACT

#### BACKGROUND

Two randomized trials have shown better outcomes with elective endovascular repair of abdominal aortic aneurysms than with conventional open repair in the first month after the procedure. We investigated whether this advantage is sustained beyond the perioperative period.

#### METHODS

We conducted a multicenter, randomized trial comparing open repair with endovascular repair in 351 patients who had received a diagnosis of abdominal aortic aneurysm of at least 5 cm in diameter and who were considered suitable candidates for both techniques. Survival after randomization was calculated with the use of Kaplan–Meier analysis and compared with the use of the log-rank test on an intention-to-treat basis.

#### RESULTS

Two years after randomization, the cumulative survival rates were 89.6 percent for open repair and 89.7 percent for endovascular repair (difference, –0.1 percentage point; 95 percent confidence interval, –6.8 to 6.7 percentage points). The cumulative rates of aneurysm-related death were 5.7 percent for open repair and 2.1 percent for endovascular repair (difference, 3.7 percentage points; 95 percent confidence interval, –0.5 to 7.9 percentage points). This advantage of endovascular repair over open repair was entirely accounted for by events occurring in the perioperative period, with no significant difference in subsequent aneurysm-related mortality. The rate of survival free of moderate or severe complications was also similar in the two groups at two years (at 65.9 percent for open repair and 65.6 percent for endovascular repair; difference, 0.3 percentage point; 95 percent confidence interval, –10.0 to 10.6 percentage points).

#### CONCLUSIONS

The perioperative survival advantage with endovascular repair as compared with open repair is not sustained after the first postoperative year.

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\*The members of the DREAM Trial Group are listed in the Appendix.

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# Open Surgery Vs. EVAR

## Early outcome

Reduced blood loss at operation

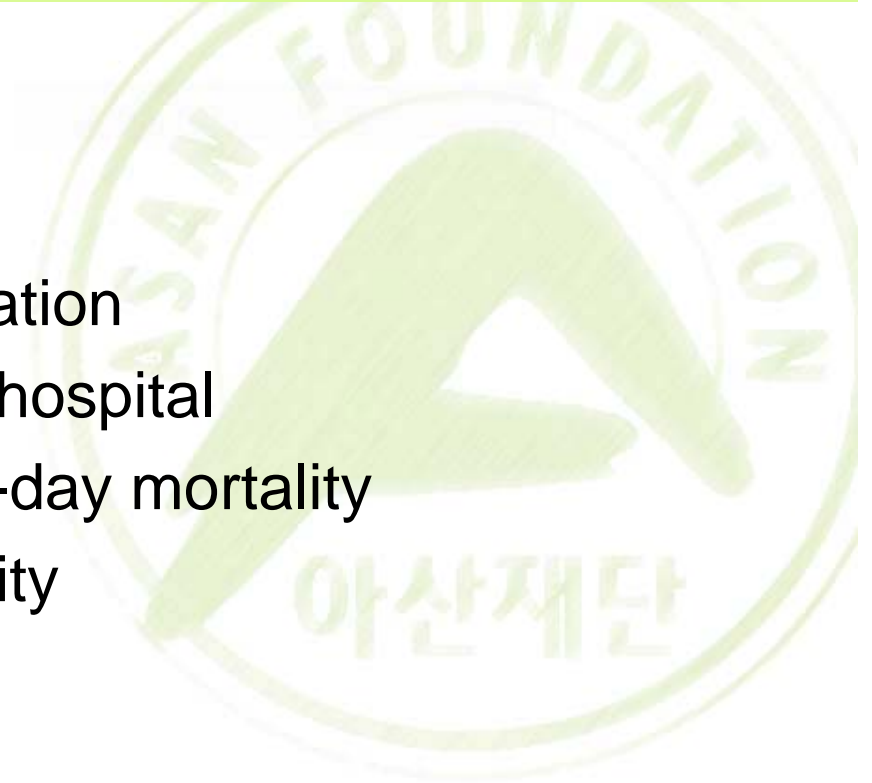
Shorter stay in the ICU and hospital

Lower procedure related 30-day mortality

Lower postoperative morbidity

## Intermediate and Late outcome

No differences





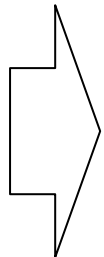
## **Stent graft was firstly considered**

High risk patient

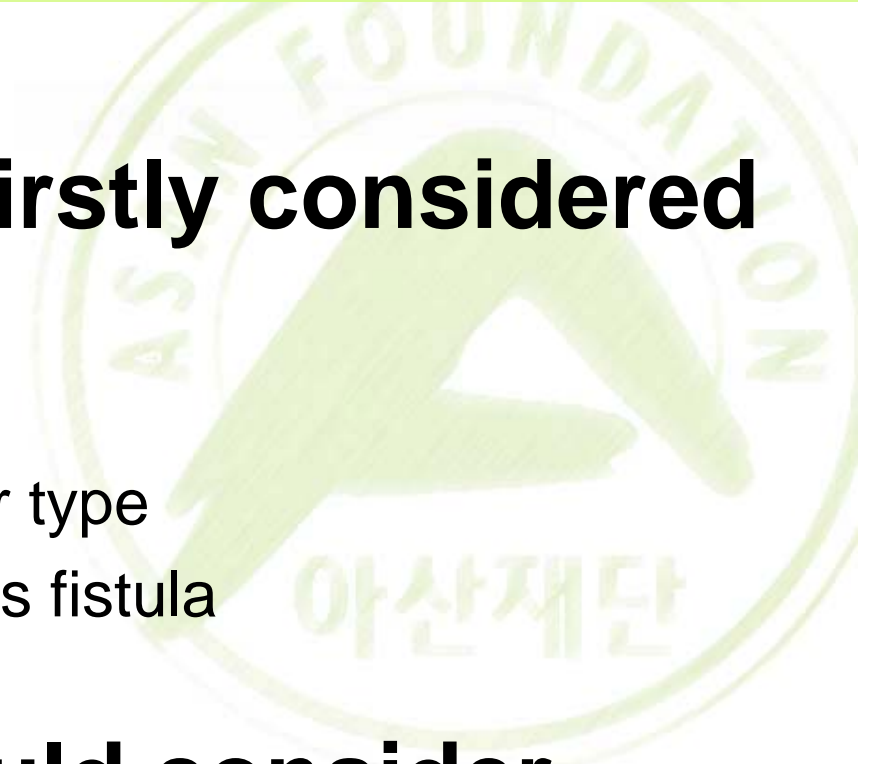
Age > 75

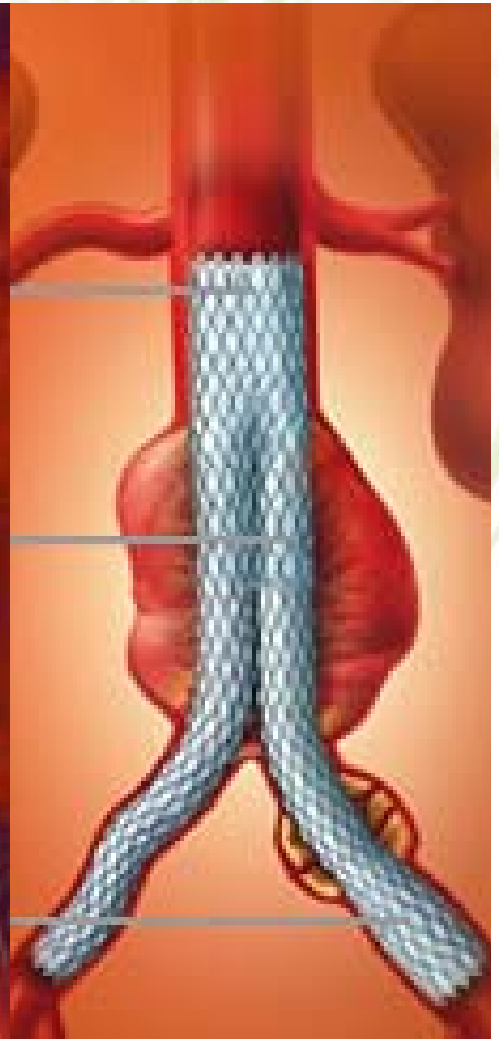
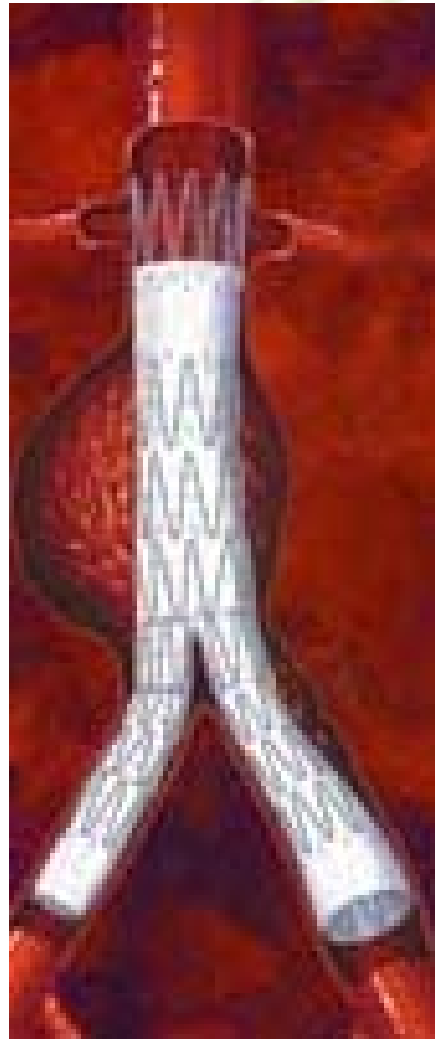
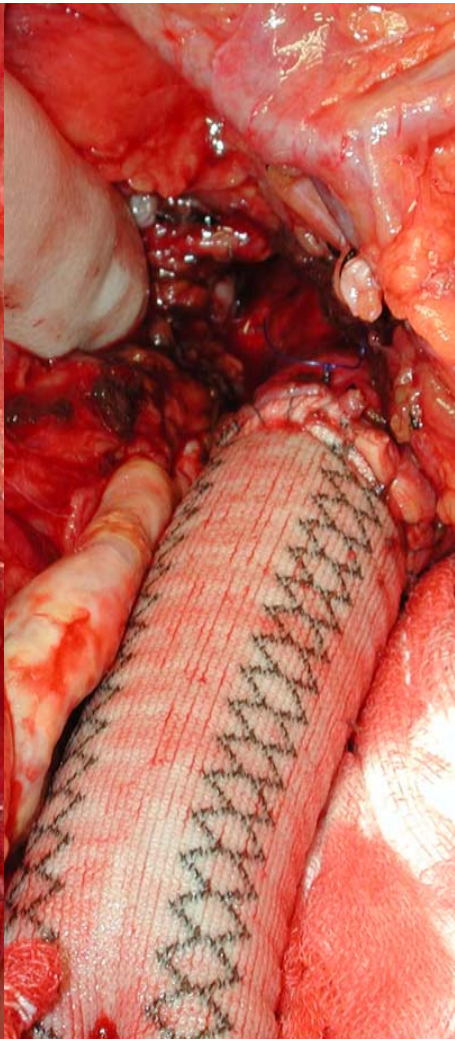
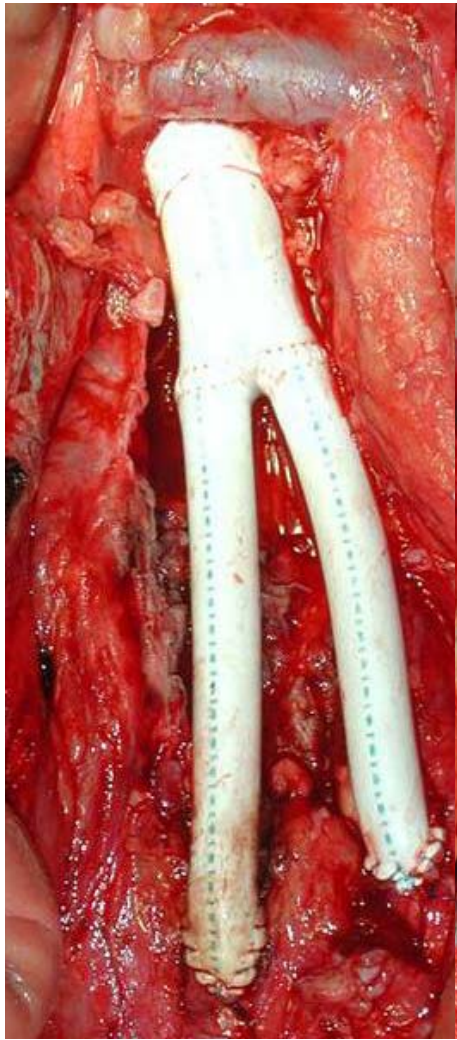
aneurysm with saccular type

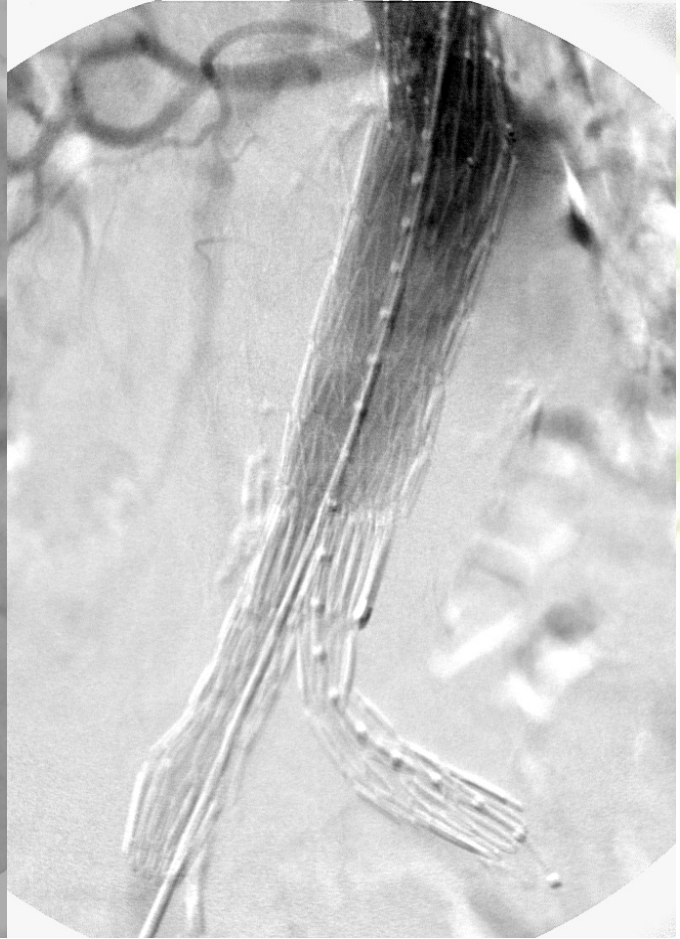
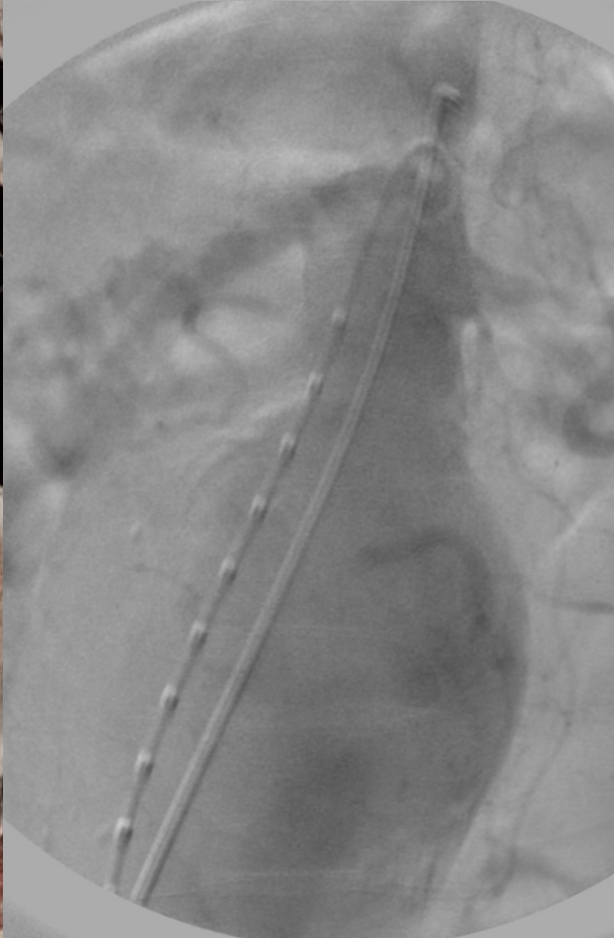
Traumatic arteriovenous fistula




**If indicated, should consider  
Stent graft first.**









# Midterm durability of abdominal aortic aneurysm endograft repair: A word of caution



Thomas J. Hölzenbein, MD,<sup>a</sup> Georg Kretschmer, MD,<sup>a</sup> Siegfried Thurnher, MD,<sup>b</sup> Maria Schoder, MD,<sup>b</sup> Erdal Aslim, MD,<sup>a</sup> Johannes Lammer, MD,<sup>b</sup> and Peter Polterauer, MD,<sup>a</sup> *Vienna, Austria*

*Purpose:* Endograft technology for abdominal aortic aneurysm (AAA) repair is being applied more liberally. There is little information about the midterm performance of these grafts. This study is focused on follow-up interventions after endograft repair for AAA.

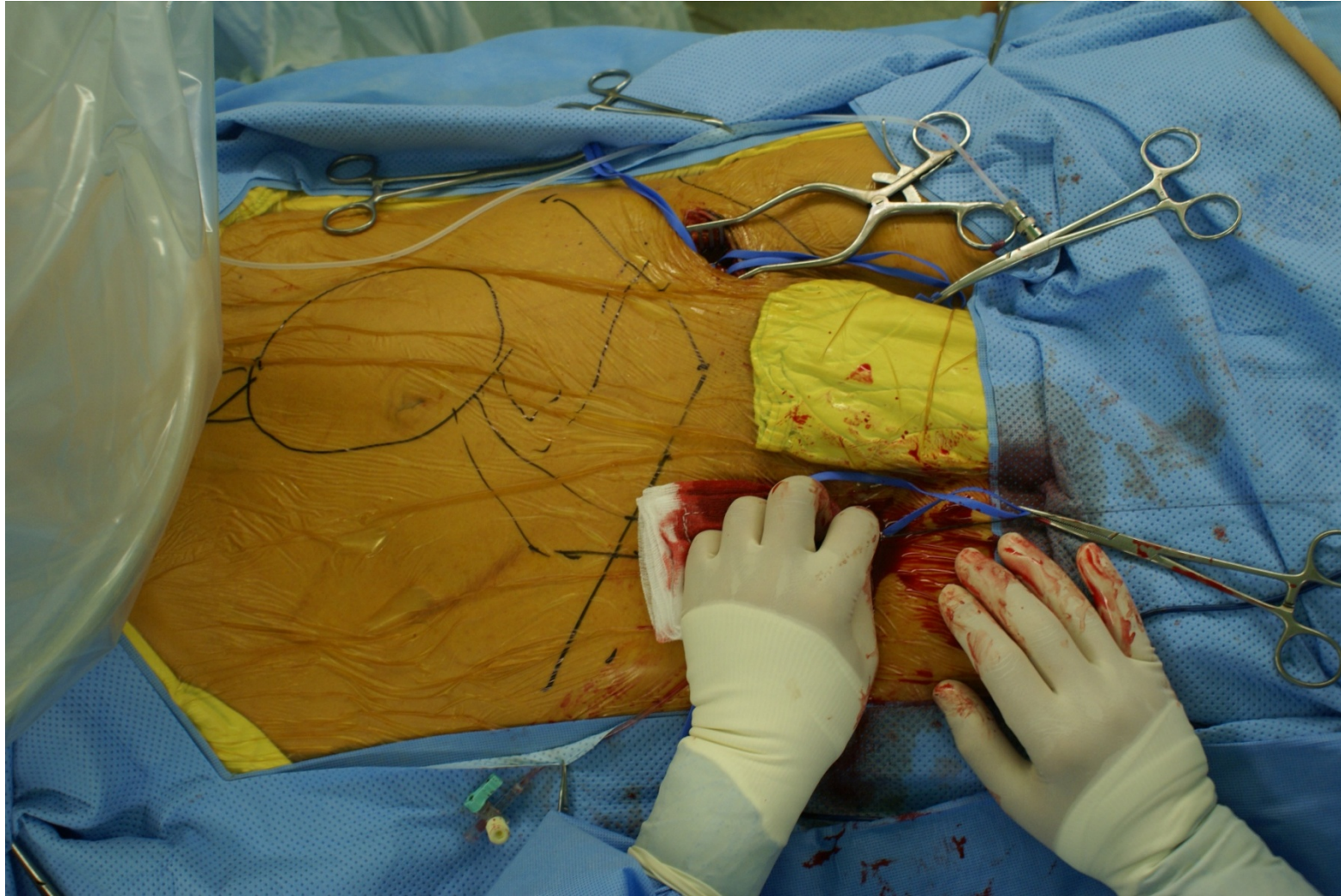
*Methods:* Prospective follow-up analysis of a consecutive patient series (n = 173 patients) at a single center who underwent endovascular AAA repair up to 50 months after operation. Seventeen percent of the patients were regarded unfit for open surgery. Four types of commercially available grafts were used. The Society for Vascular Surgery/International Society for Cardiovascular Surgery guidelines were applied for endograft implantation and data preparation.

*Results:* In two patients, the procedure was converted to open surgery. In one procedure, emergency repair for iliac artery rupture was performed. The 30-day mortality rate was 2.8% (n = 5 patients). An early second procedure to correct type I endoleaks was necessary in 8 cases (4.6%; 3-10 days). The following midterm results were obtained: median follow-up of the 166 remaining patients was 18 months (range, 1-50 months); 50 additional procedures were necessary in 37 patients (22.3%) for the treatment of leaks (n = 45 interventions) or to maintain graft patency (n = 5 grafts; four patients with concomitant graft segment disconnection); and 46% of the reinterventions were performed within the first year of follow-up and 74% of the reinterventions were performed within the second year of follow-up. One patient died after emergency surgery for rupture as the result of a secondary endoleak at 1 year. Although seven interventions (14%) were performed for type II endoleak, no serious complications were related to patent sidebranches. There was no statistically significant difference between the need for maintenance in different graft configurations (tubular, bifurcated, aorto-uniliac), or number of graft segments (1, 2, 3-4, ≥5 segments). New generation grafts (after 1996) performed better than early generation grafts ( $P = 0.04$ , chi-squared test) with regard to endoleak development.

*Conclusion:* Endograft repair for AAA is safe but, with current technology, not as durable as open repair. Our data suggest that the use of endograft repair for AAA is becoming safer as endograft design improves. Nevertheless in 26.6% of the patients, there is need for reintervention within midterm follow-up. Close follow-up is crucial because late leaks may develop after more than 2 years after the initial procedure. Endoluminal repair should therefore be applied with caution, strict indication, and only if a tight follow-up is warranted. These findings may also affect health care reimbursement policies. (J Vasc Surg 2001;33:S46-54.)



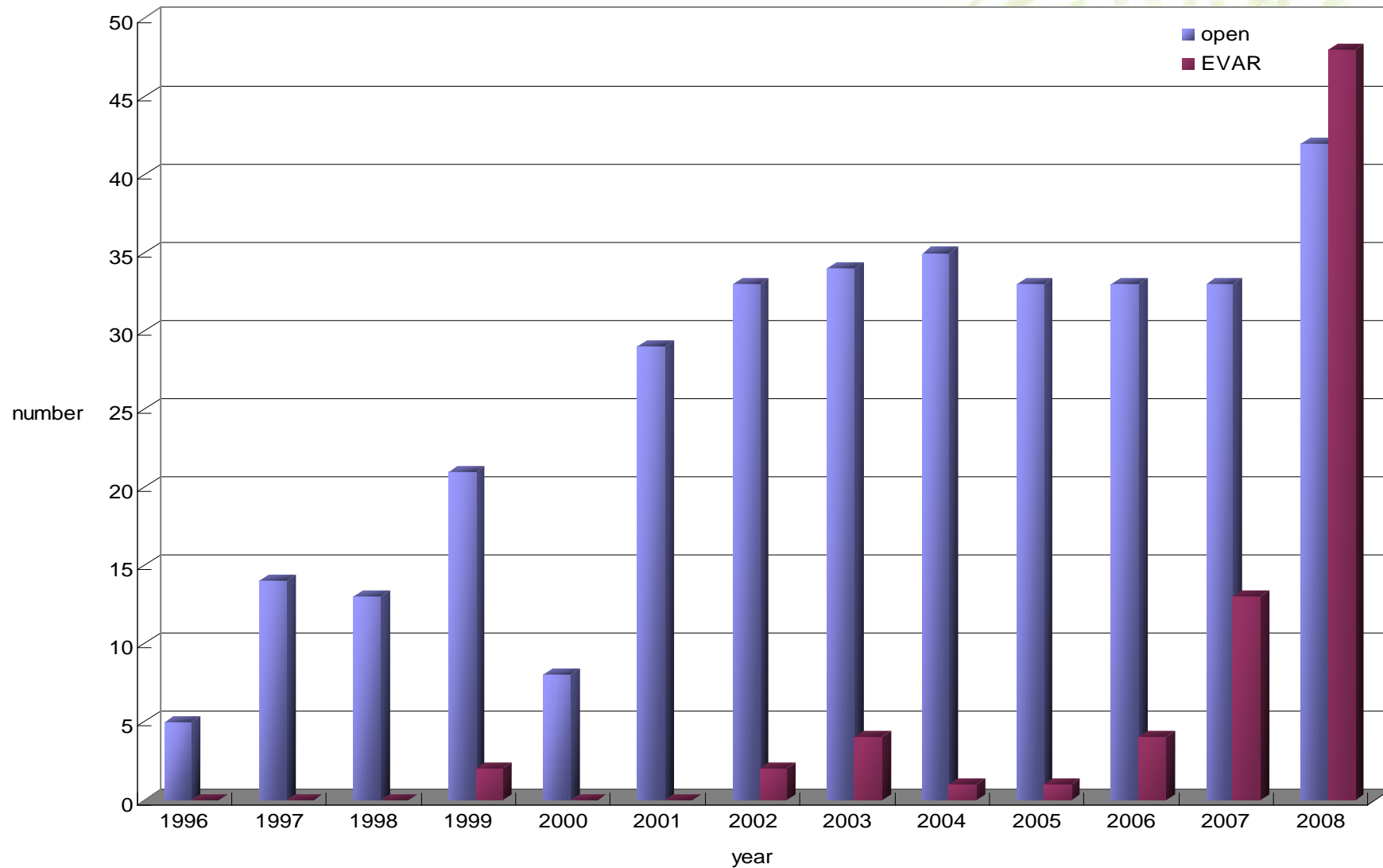








# EVAR Vs. Open Surgery, AMC



# Why we performed open repair



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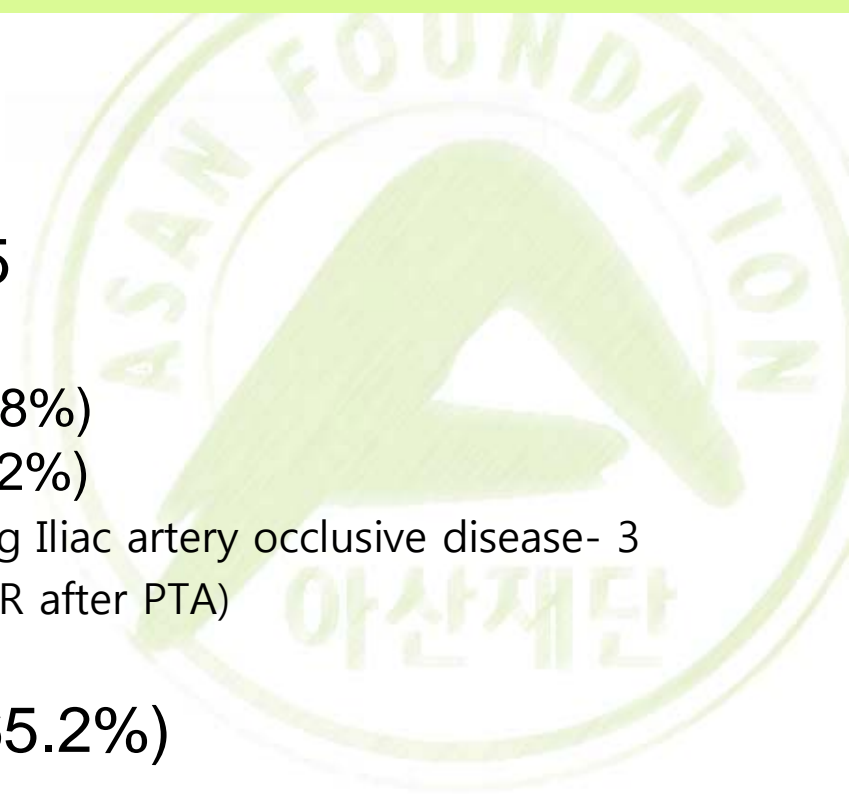


# AAA treatment Results, AMC

(2007.1.1-2008.12.31)

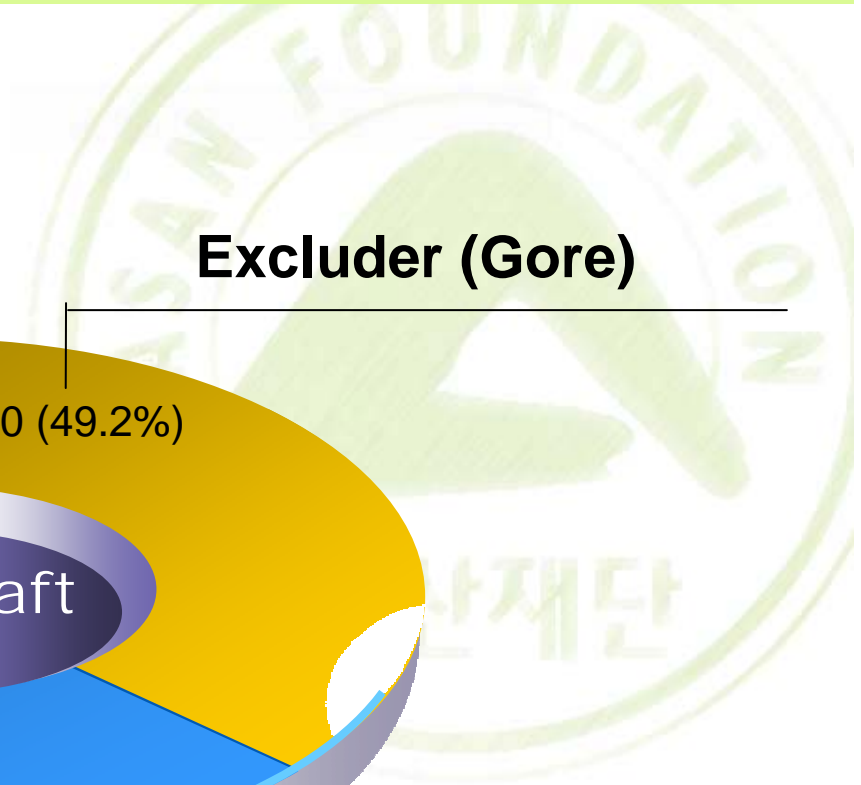
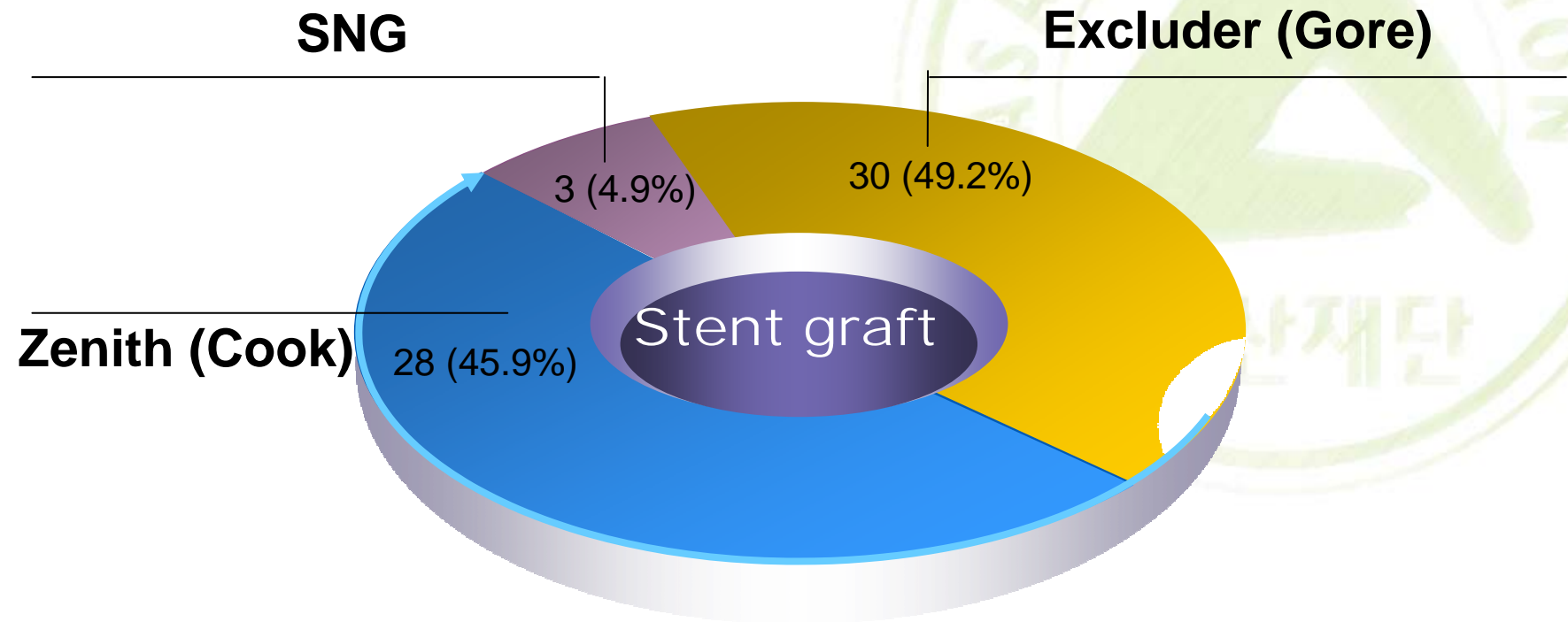


- N=134
- Age = 70.0 (47-89)
- Male:Female=119:15
- Intervention (135)
  - Open repair = 74 (54.8%)
  - EVAR = 61 (45.2%)  
( including Iliac artery occlusive disease- 3  
; EVAR after PTA)
- Hypertension = 88 (65.2%)
- DM = 35 (23.3%)
- Smoking = 53 (39.3%)
- Rupture=16 (Open: 14, EVAR: 2 )





# EVAR – material





# Short neck



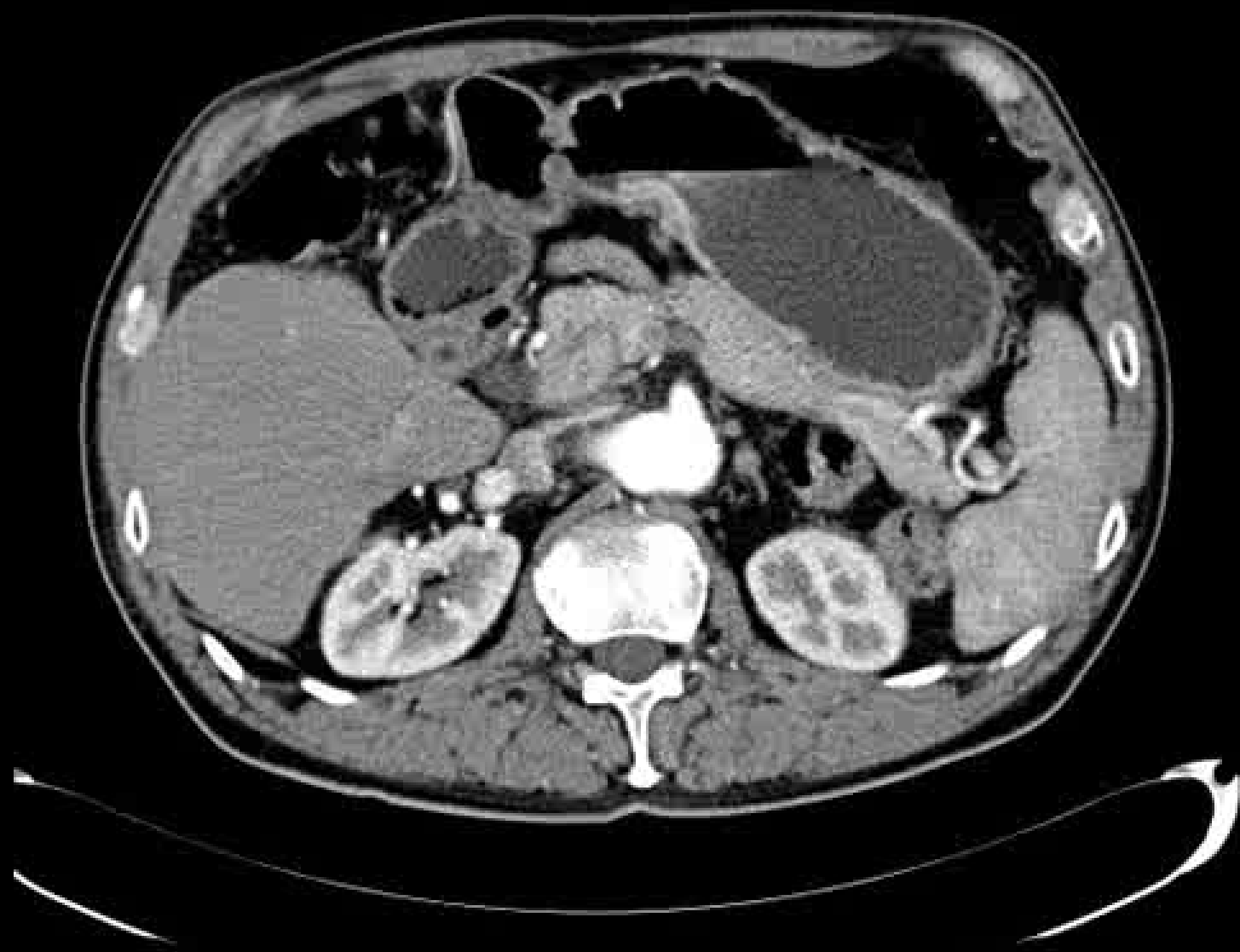






**angulation**







# Neck diameter

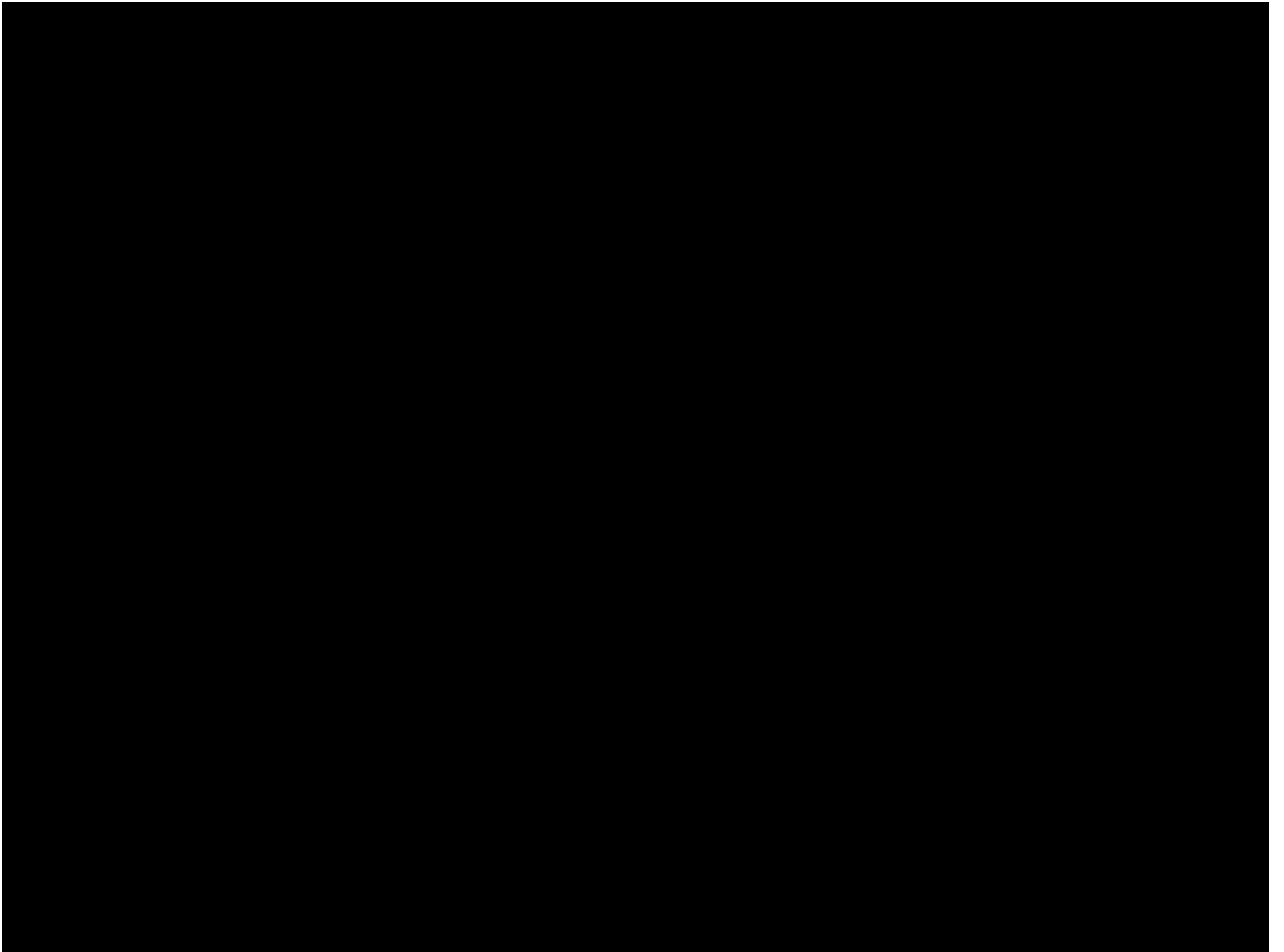






**Neck – conical shape**

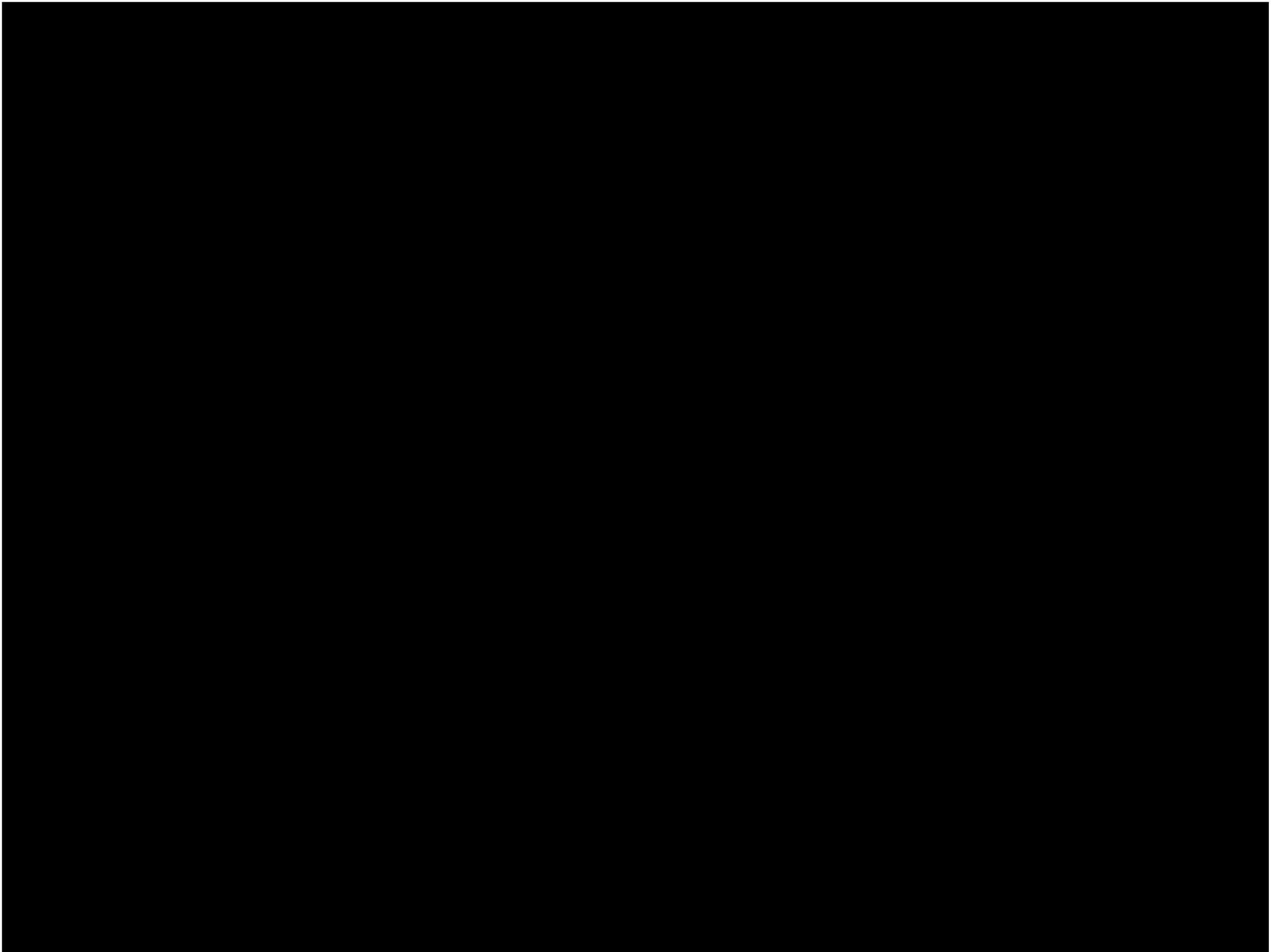






# Iliac artery occlusion









# **Both common iliac artery involvement in young patient**

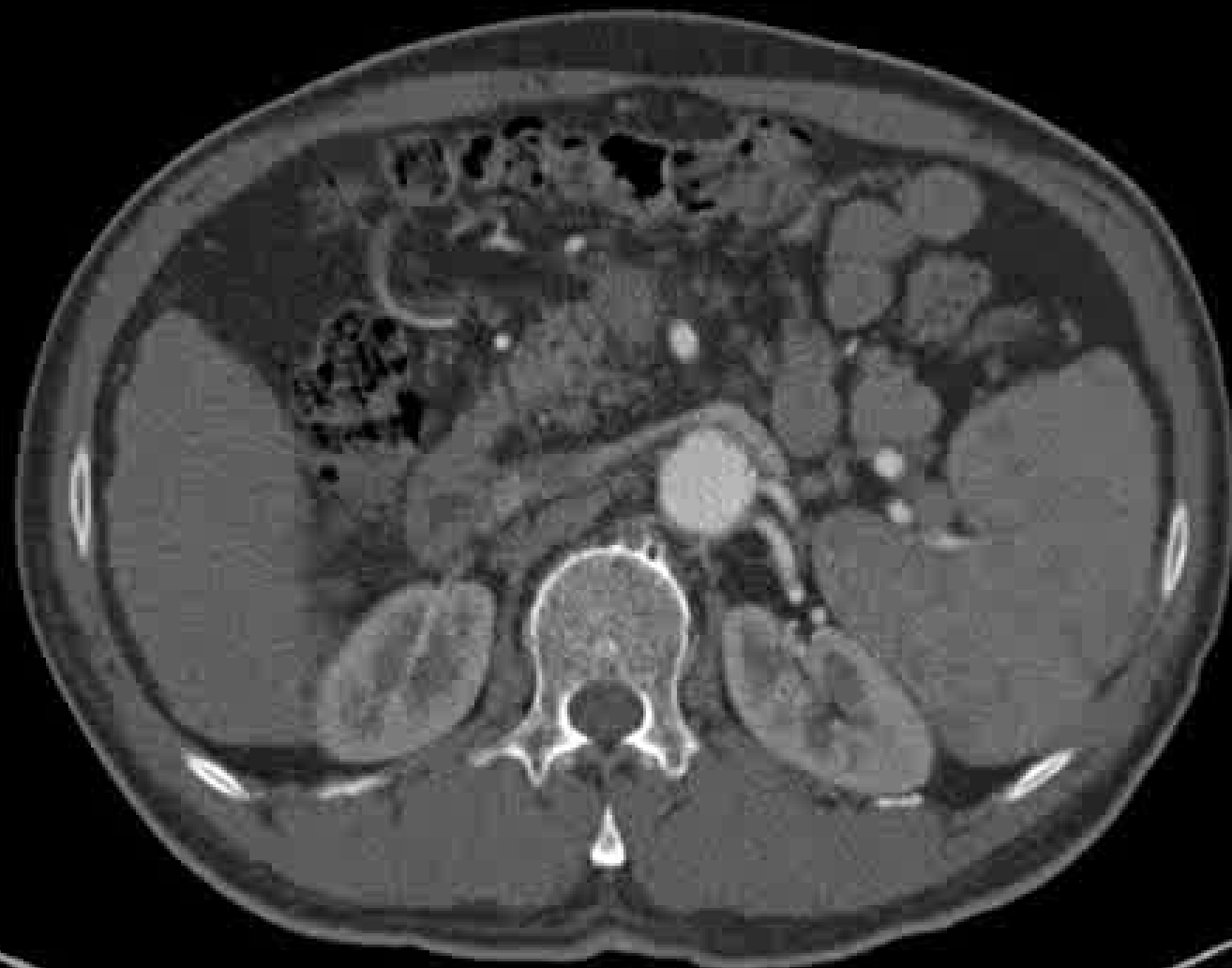






# Open conversion -proximal type I endoleak







# **Open correction -proximal type I endoleak**

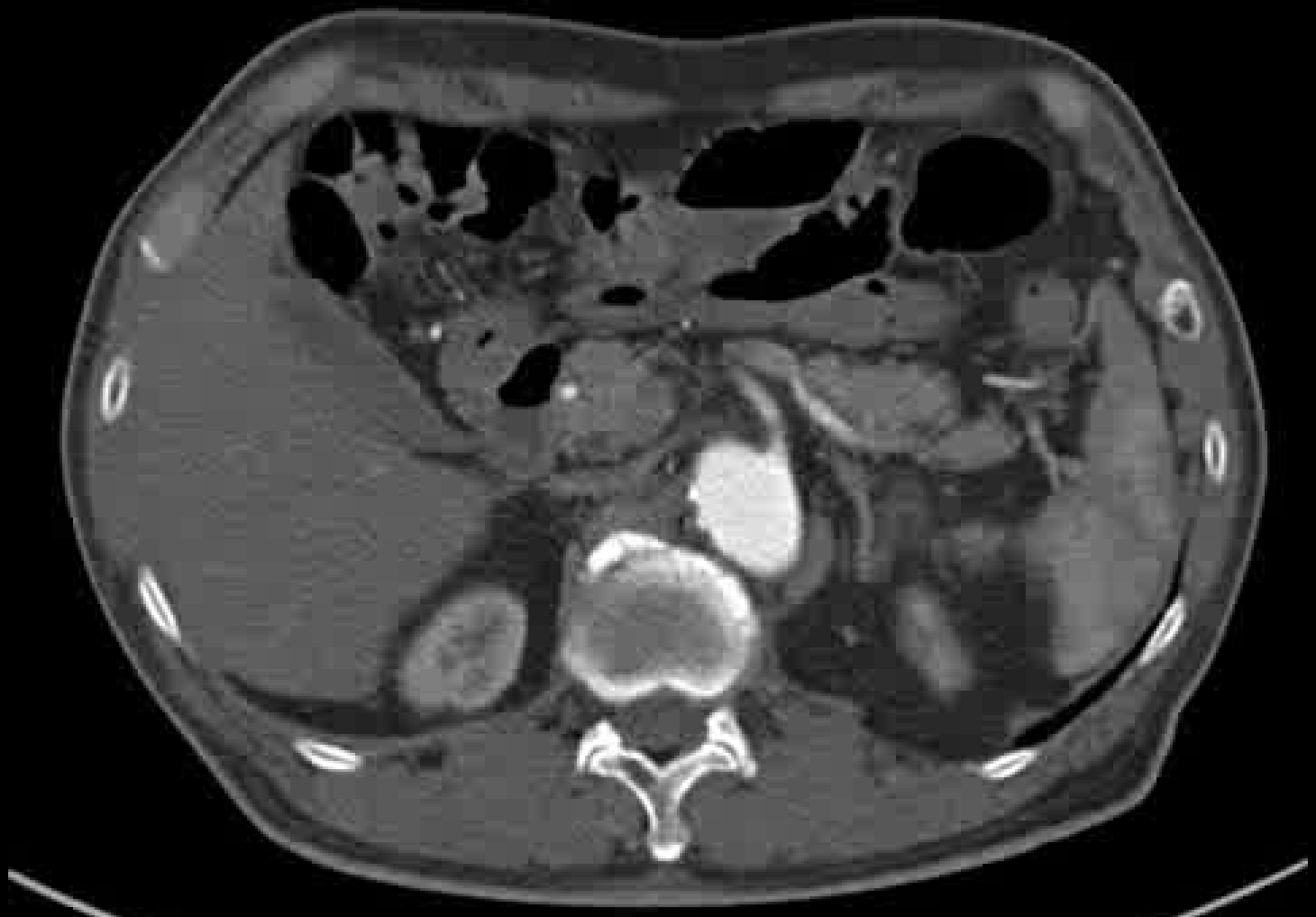


**preop**



# **Open correction -distal type I endoleak**



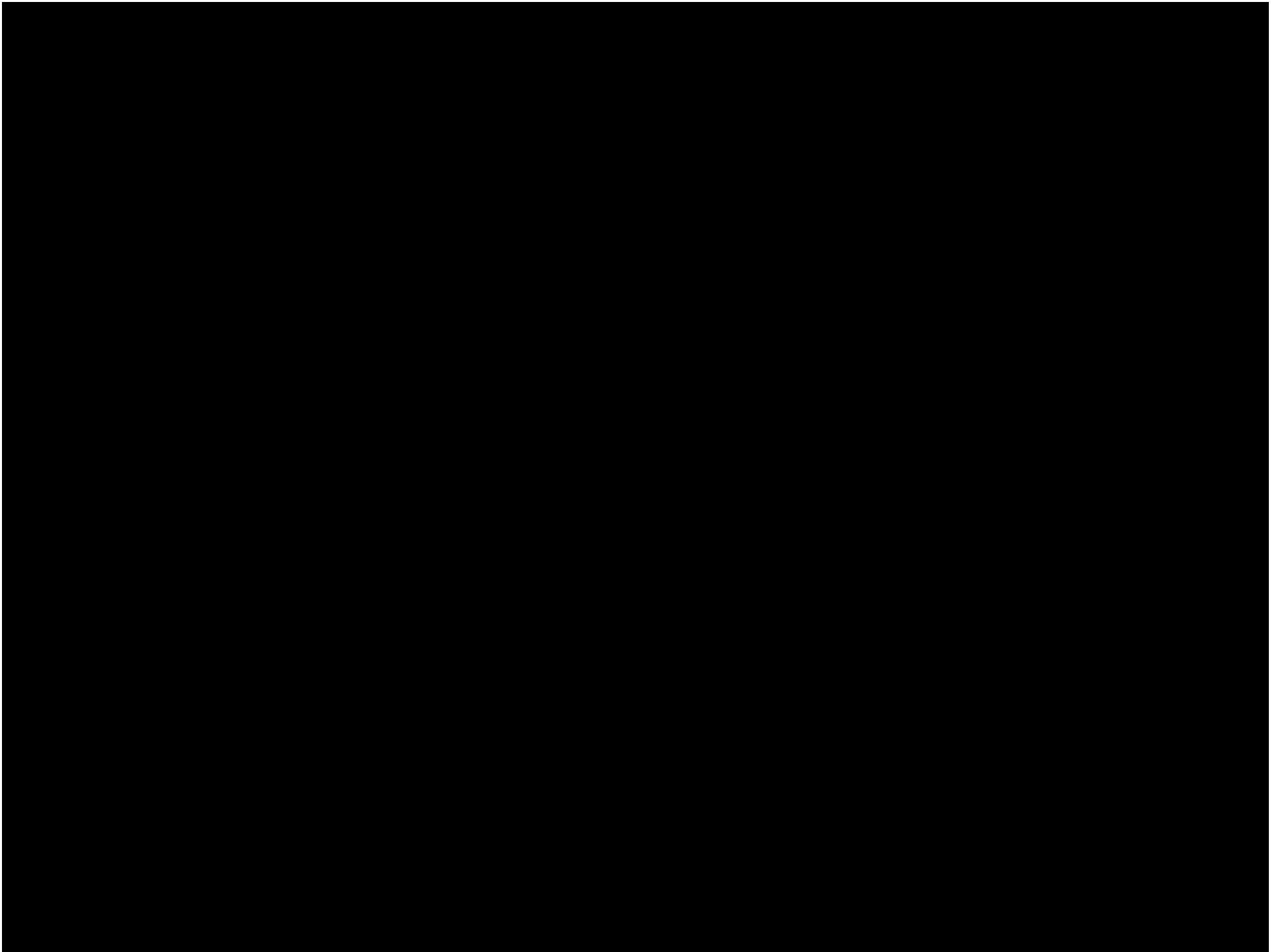




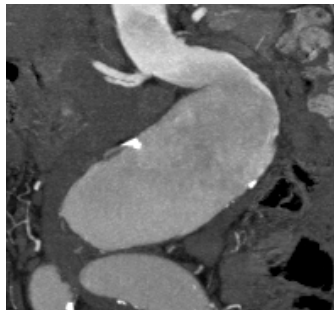
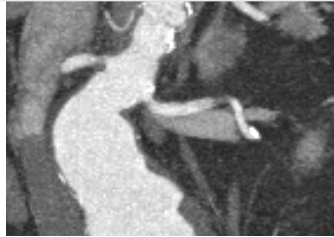


# Limb tortuosity





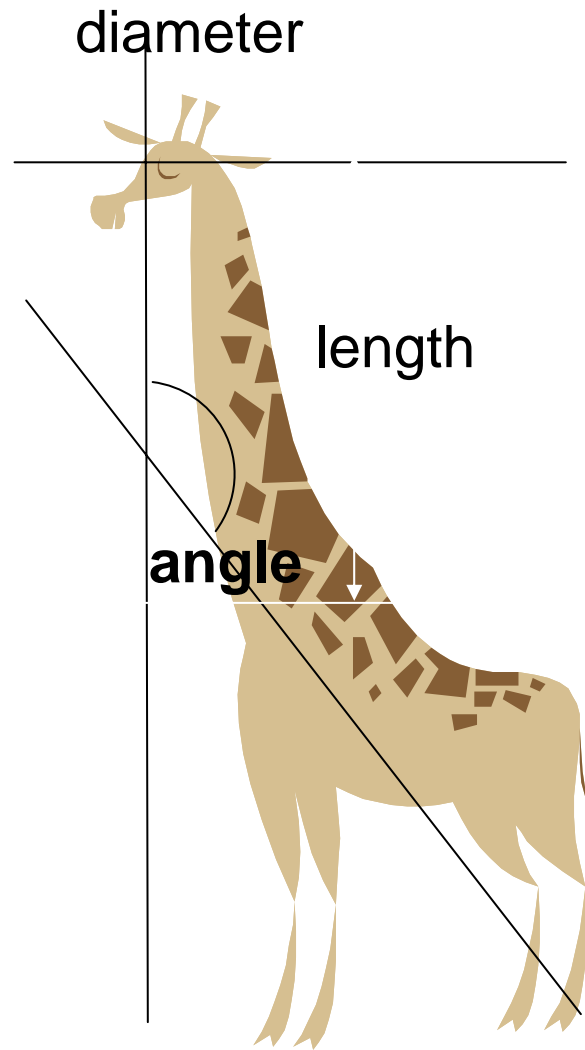
Yes, there are solid reasons to consider open aneurysm repair.



- Short neck
  - 35 (47.3%) ( $6.5 \pm 6.2\text{mm}$ :0-19.7mm)
- Angulation
  - 16 (21.6%) ( $80.1 \pm 18.8^\circ$ :40-111°)
- Neck diameter
  - 7 (9.5%) ( $30.5 \pm 2.6\text{mm}$ :26.3-33.8mm)
- Younger age / refusal - 12 (8.9%)
- Rupture - 4 (3.0%)



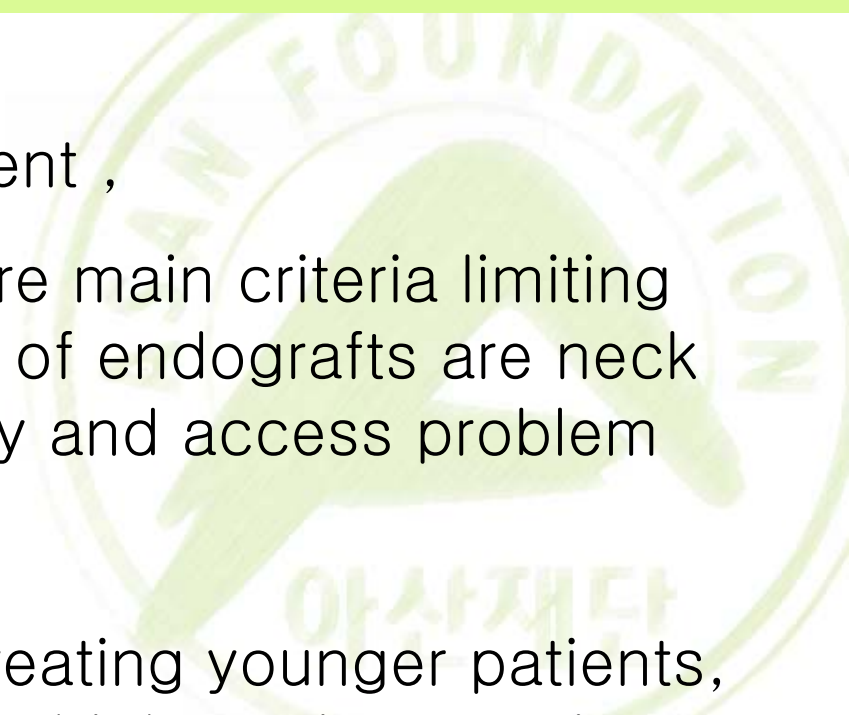
# Conclusion



At present ,

Be aware main criteria limiting the use of endografts are neck anatomy and access problem

When treating younger patients, consider higher reintervention rates associated with endografts and proven durability of an open repair





**Thank you !**

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