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Fortuitous discovery of chronic occlusion of the right external iliac artery during preoperative assessment for abdominoplasty

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Background: Abdominoplasty is one of the most frequently requested procedures after major weight loss or pregnancy. Preoperative imaging is not routinely performed, but when obtained, it can occasionally reveal unexpected anatomical findings with major surgical implications. External iliac artery (EIA) occlusive disease may be related to atherosclerosis (AS) or, more rarely, external iliac artery endofibrosis (EF). While these two entities differ in etiology and patient profile, both can significantly alter the safety of planned abdominal or pelvic procedures. This case highlights the importance of vascular assessment in plastic surgery, where collateral circulation may be crucial to limb perfusion.

Case presentation: A 31-year-old woman sought abdominoplasty after massive weight loss post-gastric bypass. She had no vascular risk factors, was asymptomatic, and showed normal distal pulses on examination. A CT scan performed to assess rectus abdominis diastasis unexpectedly revealed complete chronic occlusion of the right EIA. Limb perfusion was maintained via suprapubic and epigastric collaterals, with retrograde flow from a profunda femoris branch. Investigations confirmed a chronic process. The differential diagnosis was between EF, more typical of younger patients, and AS, which is more common but less likely in this clinical setting.

As distal perfusion relied on superficial collaterals coursing through the abdominoplasty resection area, their sacrifice would have carried a catastrophic risk of acute limb ischemia. After multidisciplinary review with vascular specialists, the surgery was cancelled. The patient remains under clinical follow-up without vascular intervention.

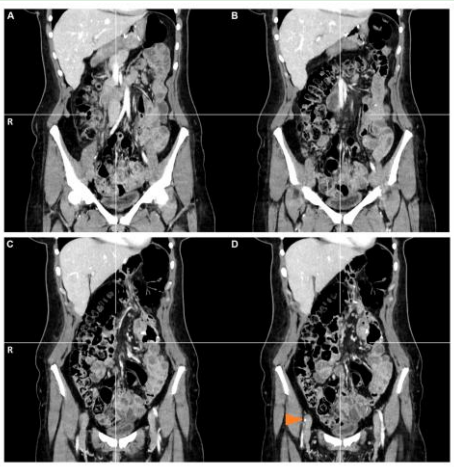

Fig. 1: Coronal CT shows contrast flow through the iliofemoral axis. Contrast is restricted at the right proximal external iliac artery (A) and almost absent in its mid-portion (B). The proximal common femoral artery lacks contrast (C), with reappearance distally (D). The round appearance suggests reinjection into the proximal femoral trunk via an anteroposterior vessel (orange arrowhead, D)

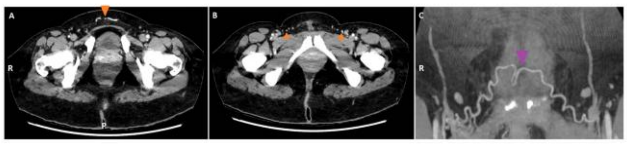

Fig. 2: Transversal CT illustrates the subcutaneous collateral circulation and the progression of contrast (orange arrowhead, A and B). A reconstructed transverse view reveals subcutaneous and suprapubic collaterals between the two proximal segments of the SFA (purple arrowhead, C).

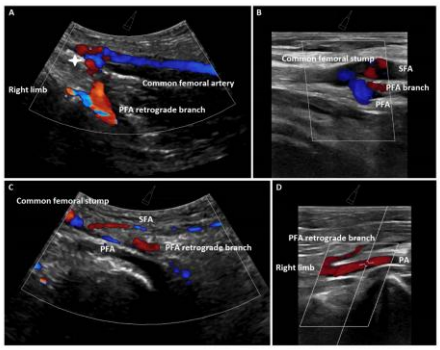

Fig. 3: Colour-pulsed Doppler imaging of the right lower limb demonstrates a retrograde reinjection from a profunda femoris (PFA) branch that restores flow to the femoral and popliteal axes.

Discussion: This case illustrates the fundamental role of vascular anatomy in plastic surgery. Abdominoplasty depends on intact blood supply, and in chronic occlusion, collateral vessels may be the only safeguard for limb perfusion, making their injury potentially disastrous. Differentiating EF from AS is clinically important but often difficult and relies on imaging. EF typically affects young, athletic patients, results from mechanical stress with fibrous intimal thickening, and appears on imaging as localized stenosis without calcification. AS, in contrast, affects older patients with cardiovascular risk factors, arises from inflammation and lipid accumulation, and presents as plaques or calcifications. Management differs: EF is usually conservative or surgically resected if symptomatic, while AS is managed with lifestyle changes, statins, and revascularization when needed.

In this asymptomatic patient, no treatment of the occlusion was required, but the elective nature of abdominoplasty and the vascular risk justified abandoning the procedure. This report demonstrates how incidental radiological findings may dramatically alter surgical planning, ensuring patient safety. It draws attention to the importance of individualized surgical decision-making, where the risks of vascular compromise must be carefully weighed against the benefits of elective procedures

Features	Endofibrosis	Atherosclerosis
Etiology	Fibrous thickening, mechanical stress	Lipid accumulation, inflammation
Typical patient	Young, athletic individuals	Older, cardiovascular risk factors
Imaging findings	Localized stenosis, no calcifications	Calcifications (sometimes absent), plaques
Management	Conservative, surgical resection	Lifestyle change, statins, revascularization

Table 1: Summary of key features differentiating endofibrosis from atherosclerosis

Learning points:

- Preoperative imaging can reveal critical incidental findings that may significantly alter surgical decisions.
- Plastic surgeons must have a thorough understanding of underlying vascular anatomy, including anatomical variations, to anticipate and mitigate surgical risks.
- Multidisciplinary discussions are essential when unexpected anatomical findings arise, ensuring optimal patient safety and tailored management.
- In cases of chronic arterial occlusion, collateral circulation can maintain perfusion, but surgical interventions must carefully consider the risk of disrupting compensatory pathways.