

## Abstract

Vessels are considered aneurysmal when it enlarges to about 1.5-2x the normal size of the vessel. True aneurysms include all layers of the vessel wall and pseudoaneurysms, which are more commonly seen following iatrogenic trauma from arterial cannulations, do not involve all layers of the vessel wall. True femoral artery aneurysms are very rare. The main risks associated with femoral artery aneurysms include occlusion, distal embolization and rupture. Femoral artery aneurysms are bilateral in 70% of the cases and 25% have an associated abdominal aortic aneurysm or iliac artery aneurysm (1). Risk factors include smoking, hypertension, connective tissues disorders and atherosclerosis. Most of these are discovered on physical exam or incidental imaging findings. They present as a bulge or mass in the groin which is pulsatile and cause edema due to venous compression, pain or a DVT. When these are discovered a thorough physical exam and history is performed to assess for distal embolization, infection or trauma. Femoral artery aneurysms are further interrogated with ultrasound and/or CTA when there is question about the diagnosis or when planning of future repair.

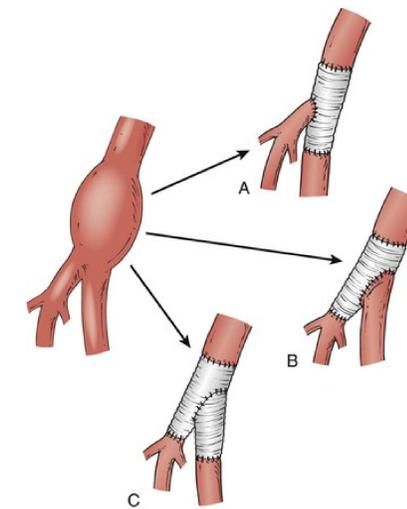
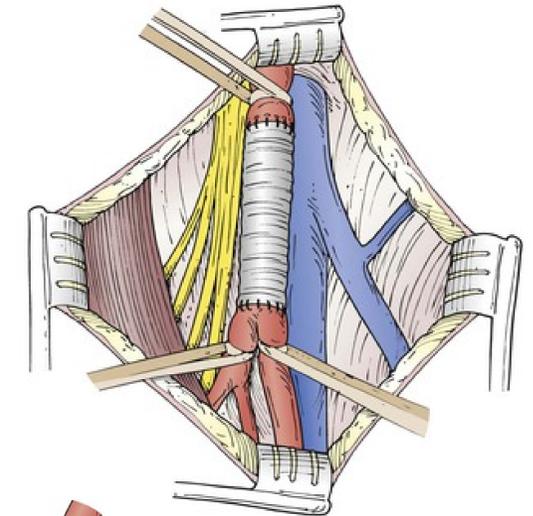
## Case

67M with a past medical history of COPD, coronary artery disease and currently undergoing chemotherapy and radiation for stage IV lung adenocarcinoma and a past surgical history of an aortobifemoral bypass graft for severe aorto-iliac occlusive disease in 2020 presents to the Emergency Room with weakness and fatigue causing a fall at home. He had recently been treated for pneumonia with antibiotics and presented with a cough, fever and tachycardia. He received a trauma CT scan and an incidental, 6cm left femoral artery aneurysm at the end to side anastomosis of the left limb between his aortobifemoral bypass graft and his common femoral artery. No fluid collection was appreciated on CT but there was concern for seeding of the graft or infection from his concurrent pneumonia which caused the aneurysm to develop. Another etiology was from trauma. He was seen by the Medicine, Hematology/Oncology, Pulmonology and Palliative services and optimized for repair of his aneurysm.

An oblique, suprainguinal incision was made followed by deep dissection into the per-peritoneal space. The pulsatile PTFE graft was identified. Circumferential dissection was performed and proximal control was obtained. A second longitudinal incision was made over the femoral aneurysm one inch below the first incision. The aneurysm was entered and bleeding was immediate. Direct pressure was applied to prevent backbleeding from the graft. A Fogarty was advanced and inflated with a three-way stopcock for hemostasis. The sac was debrided, sent to pathology and cultures were obtained. No purulence was identified and the wound was irrigated. The femoral anastomosis was disrupted 15mm and was repaired with a running 5-0 proline. The vessel was flushed and the skin was closed. Cultures grew *Corynebacterium* and *Pseudomonas* and were sent to Mayo Clinic for further studying. ID was consulted. (Case still in progress at time of poster)

## Discussion

Femoral artery aneurysms are rare but the second most common peripheral artery aneurysm behind popliteal artery aneurysms. The accurate incidence of the disease is unknown due to the number of cases encountered with the vast majority being case reports (4). Most femoral artery aneurysms occur following endovascular access and interventions but chemotherapy has been linked to the rupture of abdominal aortic aneurysms(5). Possibly the patients chemotherapy was a contributing factor to the aneurysm's development or the fall he sustained prior to presentation. One case report suggests screening for patient with vascular reconstructive surgery (6). Further studies are needed to determine whether screening is beneficial or if there is an indication.



## References

1. Saleem T, D'Cruz JR, Baril DT. Femoral Aneurysm Repair. [Updated 2022 Jan 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan
2. Retrieved March 14, 2022, from [https://www.americanjournalofsurgery.com/article/S0002-9610\(09\)00059-2/fulltext](https://www.americanjournalofsurgery.com/article/S0002-9610(09)00059-2/fulltext)
3. *Lower extremity aneurysms*. Thoracic Key. Retrieved March 14, 2022, from <https://thoracickey.com/lower-extremity-aneurysms/>
4. Mitchell ME, Carpenter JP (2001) Popliteal artery aneurysm. Current therapy in vascular surgery. (4th edn), Mossby, Missouri, USA, 341-345.
5. Palm, S. J., Russwurm, G. P., Chang, D., Rozenblit, A. M., Ohki, T., & Veith, F. J. (2000). Acute enlargement and subsequent rupture of an abdominal aortic aneurysm in a patient receiving chemotherapy for pancreatic carcinoma. *Journal of Vascular Surgery*, 32(1), 197–200. <https://doi.org/10.1067/mva.2000.105665>
6. Ali, B., Ulaankhuu, B., & Duhan Fatih, B. (2018). A rare late term complication of vascular surgery: True common femoral artery aneurysm. *International Journal of Clinical Cardiology*, 5(3). <https://doi.org/10.23937/2378-2951/1410121>