

MULTIDISCIPLINARY JOURNAL EPISTEMOLOGY OF THE SCIENCES

Volume 3, Issue 1
January–March 2026

Quarterly publication

CROSSREF PREFIX DOI: 10.71112

ISSN: 3061-7812, www.omniscens.com

Multidisciplinary Journal Epistemology of the Sciences

Volume 3, Issue 1
January–March 2026

Quarterly publication
Made in Mexico

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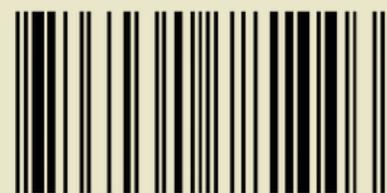
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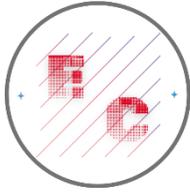
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Multidisciplinary Journal Epistemology of the Sciences Vol. 3, Issue 1, January-March 2026, is a quarterly publication edited by Dr. Moises Ake Uc, C. 51 #221 between 16B and 16C, Mérida, Yucatán, Mexico, C.P. 97144, Tel. 9993556027, Web: <https://www.omniscens.com>, admin@omniscens.com. Responsible Editor: Dr. Moises Ake Uc. Rights Reservation No. 04-2024-121717181700-102, ISSN: 3061-7812, both granted by the Instituto Nacional del Derecho de Autor (INDAUTOR). Responsible for the last update of this issue: Dr. Moises Ake Uc, last modification date: January 1, 2026.



Multidisciplinary Journal Epistemology of the Sciences

Volume 3, Issue 1, 2026, January-March

DOI: <https://doi.org/10.71112/t6avrg71>

**UNCOMMON VASCULAR COMPLICATION: PSEUDOANEURYSM OF THE
COMMON FEMORAL ARTERY FOLLOWING RECURRENT RIGHT INGUINAL
HERNIOPLASTY**

**COMPLICACIÓN VASCULAR INFRECUENTE: PSEUDOANEURISMA DE LA
ARTERIA FEMORAL COMÚN TRAS HERNIOPLASTIA INGUINAL DERECHA
RECURRENTE**

Sergio Omar Ajpacajá García

Stephany Johana Maldonado

Estuardo Emmanuel Ruiz Gramajo

Caroll Andre García Salpor

Guatemala

Uncommon vascular complication: pseudoaneurysm of the common femoral artery following recurrent right inguinal hernioplasty

Complicación vascular infrecuente: pseudoaneurisma de la arteria femoral común tras hernioplastia inguinal derecha recurrente

Sergio Omar Ajpacajá García

grovermercadocondori@gmail.com

<https://orcid.org/0009-0009-7032-3853>

Radiology Department at Hospital Regional de Occidente, Quetzaltenango

Guatemala

Estuardo Emmanuel Ruiz Gramajo

ruizgram.ee@gmail.com

<https://orcid.org/0009-0001-1520-9726>

Radiology Department at Hospital Regional de Occidente, Quetzaltenango

Guatemala

Stephany Johana Maldonado

stephanyjohana21@gmail.com

<https://orcid.org/0009-0002-8492-8174>

Radiology Department at Hospital Regional de Occidente, Quetzaltenango

Guatemala

Caroll Andre García Salpor

drchejo1@outlook.com

<https://orcid.org/0009-0003-3806-3218>

Universidad Mesoamericana, Quetzaltenango

Guatemala

ABSTRACT

Femoral artery pseudoaneurysm is an uncommon but potentially severe vascular complication that may occur following surgical procedures in the inguinal region. Its appearance is usually associated with iatrogenic injury during dissection or reoperation. We present the case of a 58-year-old male with a history of recurrent right inguinal hernioplasty, who developed a common femoral artery pseudoaneurysm four months after surgery. Diagnosis was established by Doppler ultrasound and CT angiography, confirming communication with the arterial lumen.

Direct surgical repair was performed with favorable postoperative evolution. Although rare, this complication requires a high level of clinical and diagnostic suspicion to avoid severe hemorrhagic consequences. Careful postoperative follow-up and accurate identification of vascular structures are essential for prevention (Chowdhury et al., 2024; Gou et al., 2024).

Keywords: femoral pseudoaneurysm; inguinal hernioplasty; vascular complications; case report; surgical iatrogenesis.

RESUMEN

El pseudoaneurisma de la arteria femoral es una complicación vascular poco común pero potencialmente grave, que puede presentarse tras procedimientos quirúrgicos en la región inguinal. Su aparición suele estar asociada con una lesión iatrogénica durante la disección o una reoperación. Presentamos el caso de un hombre de 58 años con antecedentes de hernioplastia inguinal derecha recurrente, quien desarrolló un pseudoaneurisma de la arteria femoral común cuatro meses después de la cirugía. El diagnóstico se estableció mediante ecografía Doppler y angiotomografía computarizada, que confirmaron la comunicación con el lumen arterial. Se realizó reparación quirúrgica directa con evolución posoperatoria favorable. Aunque infrecuente, esta complicación requiere un alto nivel de sospecha clínica y diagnóstica para evitar consecuencias hemorrágicas graves. El seguimiento posoperatorio cuidadoso y la identificación precisa de las estructuras vasculares son esenciales para su prevención

Palabras clave: pseudoaneurisma femoral; hernioplastia inguinal; complicaciones vasculares; reporte de caso; iatrogenia quirúrgica.

Received: October 29, 2025 | Accepted: November 18, 2025 | Published: February 19, 2026

INTRODUCTION

Femoral artery pseudoaneurysm is a rare complication usually derived from invasive procedures or surgeries in the inguinal region. It is characterized by the formation of an extraluminal cavity communicating with the artery through a fibrous neck, resulting in a pulsatile mass that may cause pain, hematoma, or compression of adjacent structures. Its occurrence following hernioplasty is exceptional. The pathophysiology involves partial arterial wall injury during surgical dissection or reoperation, especially in the presence of postoperative fibrosis. Diagnosis is primarily established by color Doppler ultrasound, which demonstrates the characteristic bidirectional “yin-yang” flow pattern. Multidetector CT angiography confirms vascular communication and assists in therapeutic planning. (Mazurkiewicz et al., 2024).

METHODOLOGY

A retrospective, descriptive case report was conducted. Informed consent was obtained from the patient for publication, ensuring anonymity and ethical compliance. Clinical and imaging data were collected from the hospital record and analyzed for academic purposes.

Case presentation

A 58-year-old male from Totonicapán, Guatemala, with a history of recurrent right inguinal hernioplasty performed four months earlier without previous symptoms, presented with a progressive, painless inguinal mass. On physical examination, a pulsatile, expansive mass with an audible bruit was identified.

Color Doppler ultrasound revealed an ovoid, isoechoic image with double walls at the level of the common femoral artery, showing bidirectional “yin-yang” flow, consistent with a pseudoaneurysm. CT angiography confirmed a hyperdense lesion in the right inguinal region communicating with the common femoral artery through a short neck of approximately 10 mm. Due to lack of endovascular resources, conventional open surgery was performed. Dissection

and isolation of the pseudoaneurysm neck were followed by primary closure using 6-0 polypropylene suture. The postoperative course was satisfactory, with no complications or recurrence on follow-up.

RESULTS

Although rare in the context of inguinal hernia repair, femoral artery pseudoaneurysm represents a potentially serious vascular complication requiring early detection and prompt management. Continuous clinical and imaging monitoring in patients with prior inguinal surgeries, particularly reoperations, is crucial to prevent hemorrhagic or hemodynamic complications. Early intervention, whether endovascular or open, ensures favorable outcomes and minimizes risks.

Figura 1

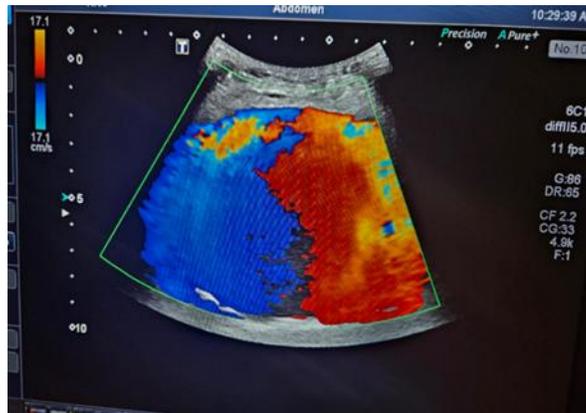
Doppler Ultrasound Evaluation



Ultrasound with color Doppler evaluation showing the common femoral artery and adjacent to it a saccular image with turbulent flow on color Doppler evaluation.

Figura 2

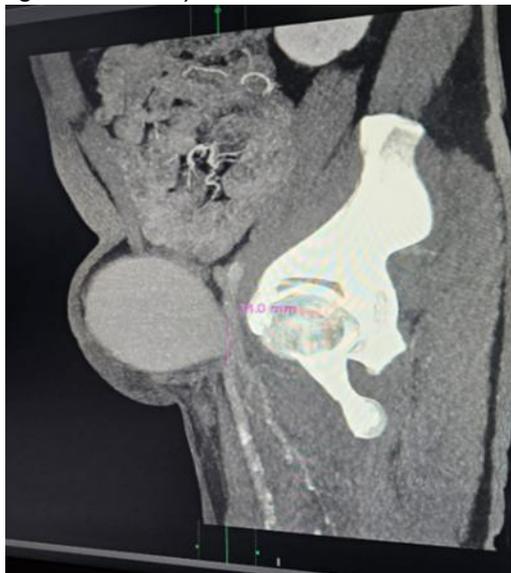
Cystic and heterogeneous mass with double wall



On ultrasound evaluation, a cystic, heterogeneous mass with a double wall is observed, along with evidence of flow in a "polar" or "yin-yang" pattern on Doppler color imaging, demonstrating a communication with the arterial lumen through a narrow neck.

Figura 3

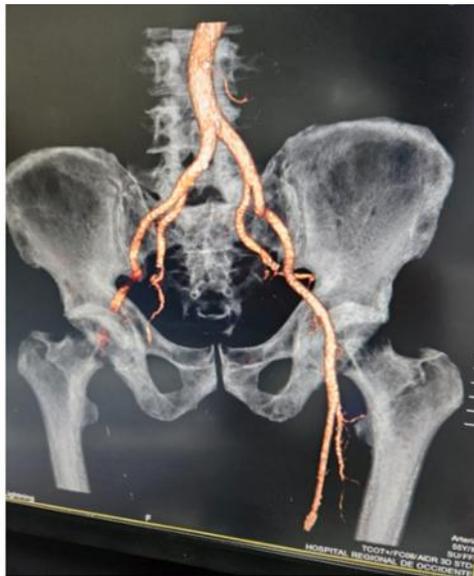
Computed Tomography (Sagittal Section).



Sagittal section of single-phase tomography showing saccular defect originating from the femoral artery.

Figura 4

3D CT Angiography Reconstruction



3D reconstruction of CT angiography, showing filling defect in projection of the right femoral artery.

The angiotomography shows a hyperdense mass with well-defined contours located in the right inguinal region, maintaining communication with the common femoral artery through a narrow neck. Upon reconstruction and contrast administration, there is partial loss of the lumen and decreased vascular flow.

Figura 5

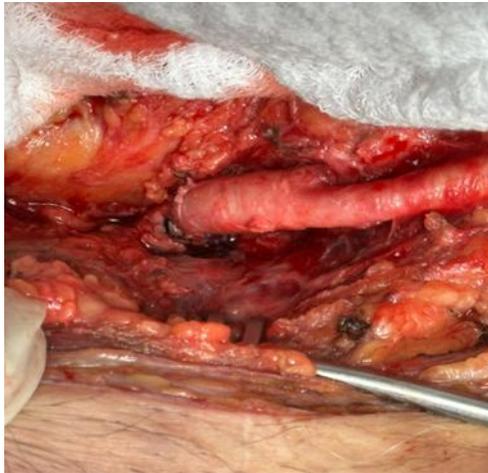
Intraoperative Finding



Intraoperative image showing common femoral artery with short neck pseudoaneurysm, as shown in the background.

Figura 6

Final Surgical Repair



In the subsequent surgical CT scans, vascular skeletonization of the artery is observed, along with dissection of the neck and primary closure of the defect with 5-0 Prolene.

DISCUSSION

Femoral pseudoaneurysm is a rare complication after inguinal surgeries, particularly reoperation. The pathophysiology involves partial arterial wall disruption, allowing blood extravasation contained by surrounding tissues, forming a cavity that communicates with the arterial lumen. Persistent communication produces turbulent flow, preventing spontaneous thrombosis and predisposing to rupture or neurovascular compression.

Reoperation is the main predisposing factor due to scar fibrosis distorting normal anatomy and complicating vascular identification. The proximity of the common femoral artery to the inguinal canal increases the risk of iatrogenic injury during deep dissection. Careful surgical planning and meticulous dissection are essential preventive measures.

Doppler ultrasound is the first-line diagnostic tool due to its availability and sensitivity. The “yin-yang” pattern is highly suggestive, helping differentiate pseudoaneurysms from lymphoceles, seromas, or hematomas. Multidetector CT angiography further defines vascular anatomy and guides therapeutic strategy.

Treatment depends on size, symptoms, and institutional resources. Options include ultrasound-guided compression, thrombin injection, covered stent placement, or open repair. In resource-limited settings, direct repair remains an effective approach with favorable outcomes. Preventively, accurate vascular identification during hernioplasty is critical, especially in patients with previous surgeries. (Gou et al., 2024).

CONCLUSIONS

Common femoral artery pseudoaneurysm is a rare but potentially severe vascular complication following inguinal hernioplasty, particularly recurrent surgeries. Early diagnosis by Doppler and CT angiography is key to preventing rupture or neurovascular compression. Direct surgical repair is a safe, effective option where endovascular management is unavailable.

Prevention relies on meticulous surgical techniques and careful postoperative surveillance.
(Alhewy, 2024).

Conflict of Interest Statement

There was no conflict of interest during the study, and it was not funded by any organization.

Authorship Contribution Statement

Each author participated significantly in the conception, drafting, critical review, and approval of the final manuscript, assuming responsibility for its content.

Artificial Intelligence Use Statement

The authors declare that Artificial Intelligence was used as support for this article, and that this tool in no way replaced the intellectual task or process. They state and acknowledge that this work is the result of their own intellectual effort and has not been published on any artificial intelligence platform.

Acknowledgments

To the Western Regional Hospital for supporting the Radiology department by providing the necessary supplies and equipment for timely diagnosis of patients.

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