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Malignant Spinal Cord Compression from Metastatic Malignant Phyllodes Tumor of the Breast, a Case report

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Case Report

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Malignant Spinal Cord Compression from Metastatic Malignant Phyllodes Tumor of the Breast, a Case report.

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ABSTRACT:

Introduction: Malignant phyllodes tumors (MPTs) are uncommon fibroepithelial neoplasms of the breast, accounting for less than 1% of breast tumors. Malignant Spinal cord compression (MSCC) from phylloides tumor is exceedingly rare, and its clinical course, management, and prognosis remain poorly characterized. This case adds to the limited literature by demonstrating the aggressive nature of the malignant phyllodes tumor and the consequences of the delayed intervention.

Case Presentation: We report a case of a 37-year-old female from Uganda previously diagnosed with malignant phyllodes tumor who presented with progressive back pain and bilateral lower limb weakness. Imaging demonstrated a T5, and L1 vertebral metastases with spinal cord compression and liver metastases. She was treated with high-dose dexamethasone, palliative radiotherapy (20 Gy/5 fractions), sorafenib, and zolendronic acid resulting in neurological improvement.

Conclusion: This case highlights the metastatic potential for MPTs, the consequences of delayed primary surgery, and the importance of early recognition of MSCC.

Keywords: Malignant phyllodes tumor, breast tumor, spinal cord compression, vertebral metastasis, rare case report.

INTRODUCTION

Phyllodes tumors are rare fibroepithelial neoplasms of the breast, accounting for less than 1% of all breast tumor (1,2). They are classified as benign, borderline, or malignant based on histopathological features including stromal cellularity, atypia, mitotic activity, stromal overgrowth, and tumor margins (2). Malignant phyllodes tumors represent the most aggressive end of the spectrum and are characterized by rapid growth, local recurrence, and the potential for distant metastasis. Unlike conventional breast carcinomas, metastatic spread in malignant phyllodes tumors occurs predominantly via hematogenous routes, most commonly to the lungs, bones, and liver, while lymphatic involvement is uncommon (3,4).

Spine vertebral bone metastasis from malignant phyllodes tumors is exceedingly rare, and presentation with malignant spinal cord compression has only been sporadically reported in the literature. Malignant spinal cord compression (MSCC) is a structural oncological emergency (5), most commonly associated with advanced malignancies such as breast carcinoma, prostate cancer, lung cancer, and multiple myeloma (6,7). It results from haematogenous metastases to the vertebral column leading to mechanical compression of the spinal cord or cauda equina and, if not promptly recognized and treated, may cause irreversible neurological deficits. Early diagnosis and timely intervention are therefore critical to preserving neurological function and quality of life.

We report successful management of a case of metastatic malignant phyllodes tumor presenting with malignant spinal cord compression in a young woman. This case highlights the aggressive clinical behavior of malignant phyllodes tumors, the consequences of delayed definitive surgical management, and the importance of early recognition and multidisciplinary palliative intervention in preventing severe neurological morbidity

CASE PRESENTATION

A 37-year-old female presented with a lump in her right breast, which was managed with a right breast lumpectomy with histology showing features of malignant phyllodes tumor of the right breast on 10 July 2024. She was advised on undergoing a modified radical mastectomy but got lost to follow-up due to financial constraints and limited

social support. Following this, the tumor progressively enlarged and she noticed new lumps over the chest wall and in the axillary region, indicating disease progression

She presented with a two-month history of progressively worsening lower back pain of gradual onset, localized to the lumbar region, felt as a tight band-like sensation around the waist with an intensity of 7/10. The pain was aggravated by straining and coughing, with no identified relieving factors. Two weeks prior to admission, she developed progressive bilateral lower limb weakness. She denied any history of bowel or bladder incontinence and reported preserved sensory function.

The patient had no known chronic medical conditions such as hypertension or diabetes mellitus. There was no family history of breast or other malignancies.

Clinical findings

On general examination, the patient was alert, fully conscious, and not in respiratory distress. She appeared to be in fair nutritional state and had palpable right axillary lymphadenopathy measuring approximately 5cm by 3cm, mobile, nodular surface, rubbery in consistency and non-tender. Her ECOG performance status was 2. There was no pallor, jaundice, peripheral edema, or dehydration.

Vital signs were as follows: blood pressure 130/80 mmHg, pulse rate 109 beats per minute, respiratory rate 18 breaths per minute, oxygen saturation 98% on room air, and random blood sugar 5 mmol/L. Glasgow Coma Scale score was 15/15.

Neurological examination revealed reduced muscle power in both lower limbs (Medical Research Council grade 3/5), with normal power in both upper limbs (5/5). Sensory examination was intact. Musculoskeletal examination demonstrated localized tenderness over the lumbar spine at the L1–L2 level.

Breast examination revealed an ill-defined right breast mass measuring approximately 5 × 5 cm in the left upper quadrant fixed to the skin, there was hyperpigmentation of the overlying skin and breast edema, there was associated sternal involvement and right axillary lymphadenopathy measuring approximately 5cm by 3cm, mobile, nodular surface, rubbery in consistency and non-tender. Abdominal examination showed no organomegaly. Cardiovascular and respiratory examinations were unremarkable.

The clinical progression from the right breast lumpectomy and key symptomatology and diagnostic milestones are summarized in the timeline below (Figure 1)

Timeline

Event	June 2024	July 2024	July 2024-Dec 2025	Oct 2025	Dec 2025
Right breast lumpectomy					
Histopathological confirmation of MPT					
Modified radical mastectomy recommended by multidisciplinary team					
Lost to follow up for 18months					
Gradual onset of progressive lower back pain					
Development of bilateral lower limb weakness					

Figure 1: Timeline of events from Diagnosis of Malignant Phyllodes tumor to Metastatic spinal cord compression presentation

Diagnostic Assessment

Given the patient's history of malignant phyllodes tumor and the new-onset progressive bilateral lower limb weakness with localized lumbar tenderness, metastatic spinal cord

compression (MSCC) was suspected. The rapid progression of neurological deficits raised concern for spinal cord compromise.

Differential diagnoses considered at the time of presentation included

Lumbar disc prolapse – given localized lower back pain and neurological symptoms.

Primary or secondary spinal lymphoma – considering systemic malignancy history and

Infective processes– though patient had no fever, weight loss, or systemic signs.

Initial laboratory tests – Complete blood counts, and CRP were performed to rule out infection. Results were largely unremarkable, making infectious etiology less likely.

CT scan of the spine – chosen because of its availability and easier access coupled with the ability to detect bony lesions and spinal metastases demonstrated an osteo-destructive anterior paravertebral soft tissue mass involving the T5 and L1 vertebrae and the ipsilateral sacrum was noted, consistent with spinal metastasis causing spinal cord compression as demonstrated in Figures 2a, 2b, 2c and 2d.

Additionally, CT imaging demonstrated a solid mass in the upper medial quadrant of the right breast measuring 44*43 mm with invasion of the overlying skin and chest wall as demonstrated in figure 4, with associated diffuse edema and skin thickening. Noted multiple enlarged right axillary nodes largest measuring 58*52 mm as demonstrated in figure 5, enlarged medial supra clavicular lymphnode measuring 14 mm and no enlarged internal mammary lymph node as well as a lobulated enhancing solid mass in the upper outer quadrant of the left breast measuring 23*21 mm and a hypodense solid mass was also identified in the right lobe of the liver measuring 59*40 mm as shown in Figure 3.

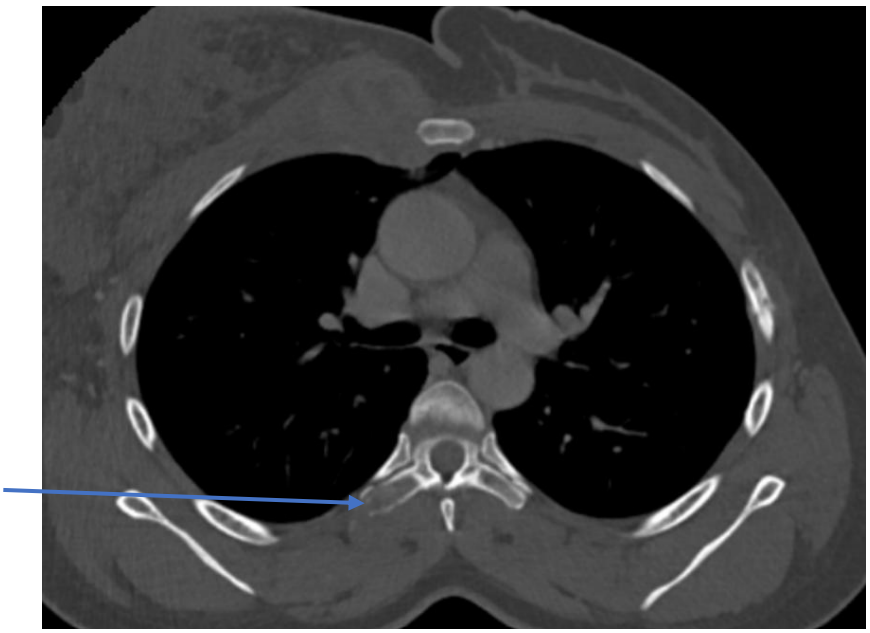


Figure 2a: Demonstration of Lytic lesion involving the right transverse process of T5 vertebral body.



Figure 2b: Demonstration of the L1 vertebral body lesion.

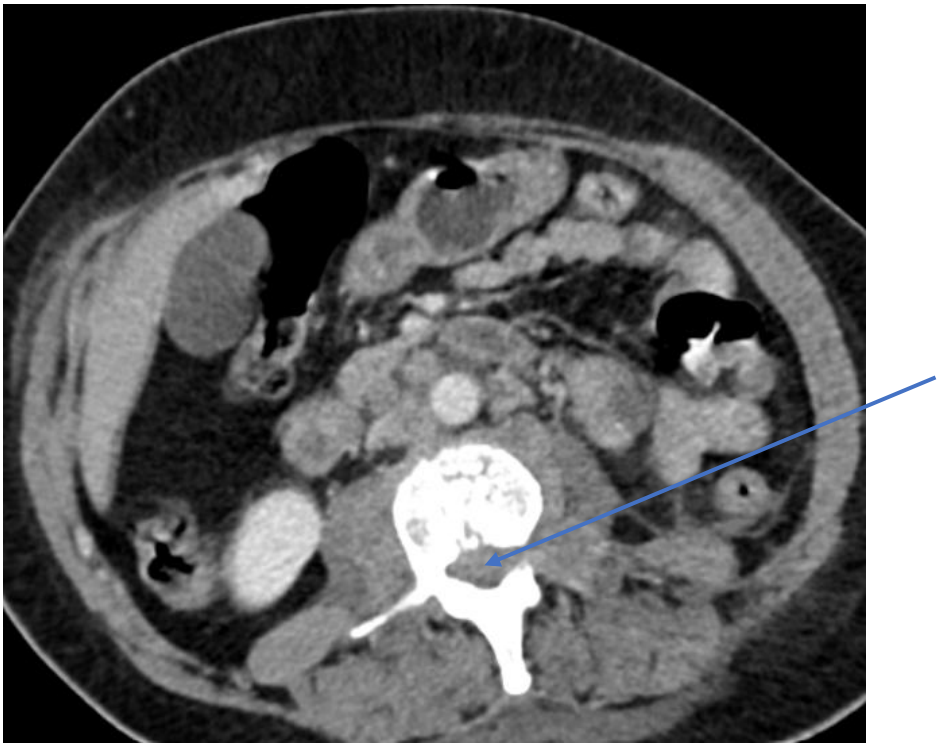


Figure 2c: Paraspinal soft tissue mass with spinal canal stenosis

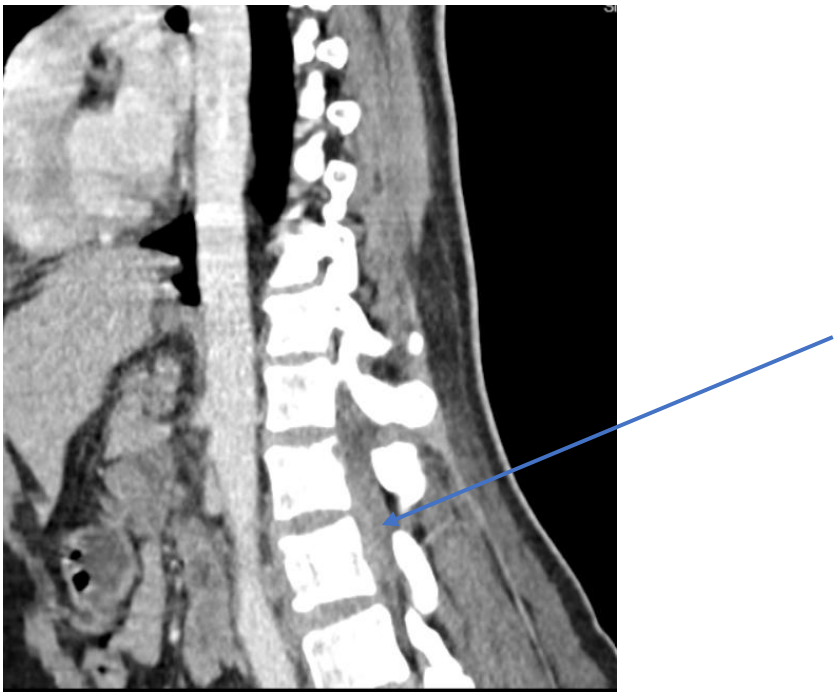


Figure 2d: Paraspinal soft tissue mass with spinal canal stenosis.

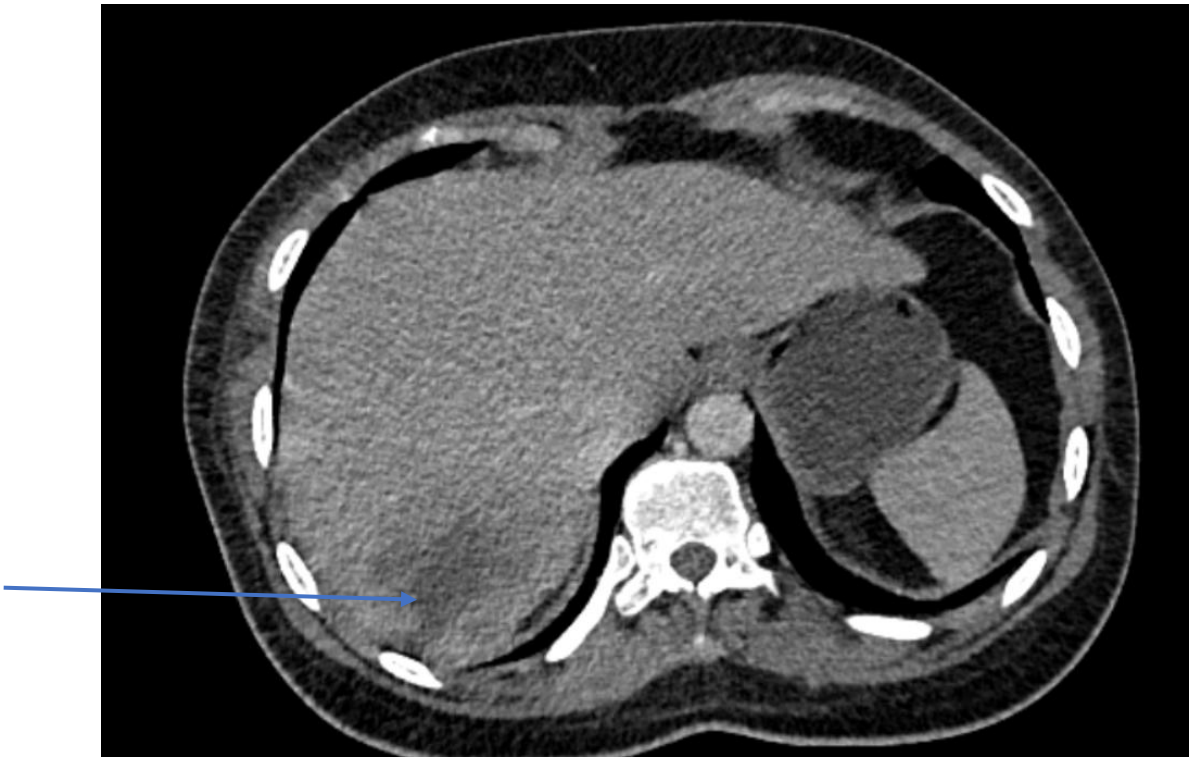


Figure 3: Demonstration of the Right lobe Liver mass on CT image in the transverse view

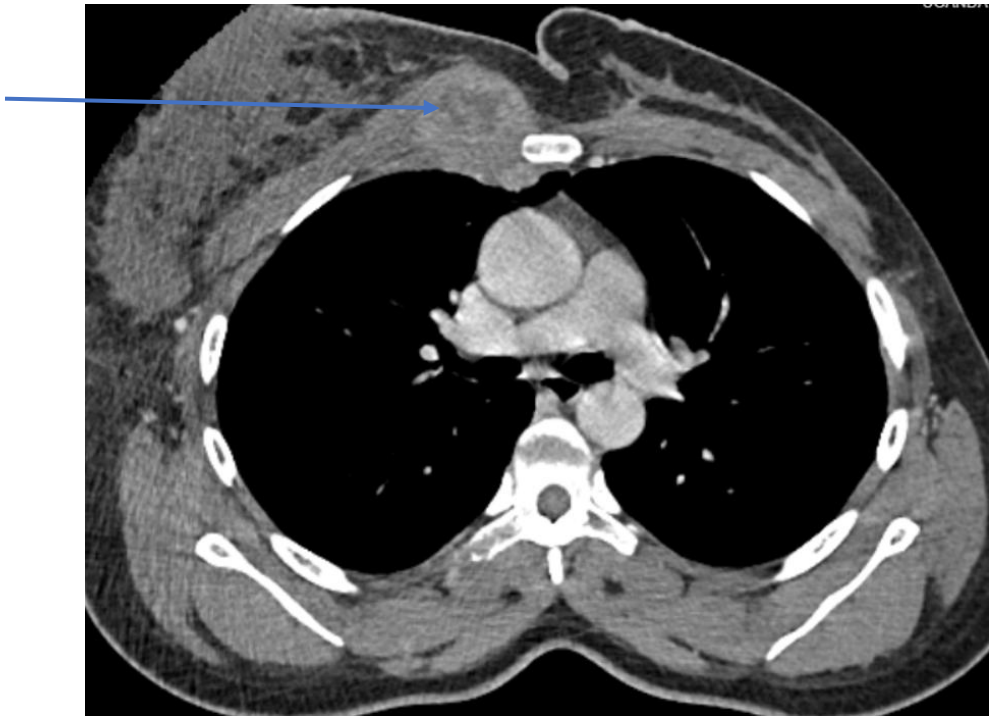


Figure 4: Demonstration of the Right breast mass on CT image



Figure 5: Demonstration of the Right axillary lymph node on CT image

Diagnostic evaluation was limited by resource constraints, including lack of immediate access to MRI imaging, necessitating reliance on CT scanning for assessment of spinal involvement.

Based on the presence of distant metastases to the spine and liver, the disease was consistent with advanced metastatic malignant phyllodes tumor, associated with poor prognosis.

Therapeutic Interventions

The patient was commenced on intravenous high-dose dexamethasone 16mg for malignant spinal cord compression. She received sorafenib 400mg as systemic therapy, zoledronic acid 4mg for bone metastases, and morphine for pain control. Palliative radiotherapy to the spine was administered at a dose of 20 Gy/5 fractions at 4 Gy per fraction for five fractions over 1 week, using a direct posterior field using 10 MV photons using 2D technique with the field spanning 2 vertebral bodies above and below the involved vertebrae. The patient successfully adhered to the prescribed treatment modalities and she tolerated them with no noted side effects.

Follow-up and Outcome

Following initiation of treatment, the patient experienced significant relief of lower back pain and demonstrated improvement in lower limb muscle strength graded at 4/5, the muscle bulk and tone were normal with preserved autonomic and sensory function.

Patient perspective

The patient reported significant relief in her lower back pain following treatment. She noted improved strength in her legs, which made it easier for her to move them and change position in bed. She expressed appreciation for the care she received and highlighted the difficulties she faced in accessing earlier treatment due to financial constraints and lack of social support.

DISCUSSION

Malignant phyllodes tumors (MPTs) are rare fibroepithelial neoplasms of the breast, characterized by aggressive biological behavior, including rapid growth, stromal overgrowth, and a propensity for local invasion (1). Histologically, they exhibit marked cellular atypia, infiltrative borders, and high mitotic rates (>10 mitoses per 10 high-power fields), distinguishing them from benign or borderline variants (8). Clinically, MPTs often present as painless, rapidly enlarging masses, with potential for unpredictable progression, including local recurrence in 20-40% of cases and distant metastasis in 10-30% (9).

This case illustrates the aggressive nature of MPTs when optimal surgical treatment is delayed. The patient initially underwent lumpectomy but did not proceed with the recommended modified radical mastectomy due to financial and social constraints, leading to loss to follow-up. In malignant variants, incomplete excision significantly increases the risk of recurrence and disease progression, as the stromal sarcomatous component drives malignant potential and systemic dissemination (10).

Metastasis in MPTs occurs predominantly through hematogenous spread rather than lymphatic dissemination which is the most attributable form in this case. The most common metastatic sites include the lungs (66–84.5%), bones (28–39%), and less frequently the liver and brain (3,4). Bone metastases frequently involve the axial skeleton

and may lead to complications such as pathological fractures or metastatic spinal cord compression (11). In this patient, metastasis to the lumbar spine with spinal cord compression, together with hepatic involvement and contralateral breast disease, reflects the aggressive hematogenous dissemination pattern characteristic of malignant phyllodes tumors.

MSCC is an oncological emergency requiring prompt recognition and management to prevent irreversible neurological deficits. Early clinical features typically include progressive back pain and neurological deficits, as seen in this patient. Standard management principles involve urgent administration of corticosteroids such as dexamethasone to reduce spinal cord edema, followed by definitive treatment with radiotherapy or surgical decompression depending on disease extent and patient condition, in metastatic disease where curative surgery is not feasible, palliative radiotherapy remains the mainstay of treatment and has been shown to improve pain and preserve ambulation in a substantial proportion of patients (12–14).

This case also highlights systemic challenges in the management of malignancies in low- and middle-income countries (LMICs). Financial barriers, limited access to specialized care, and gaps in follow-up systems frequently lead to delayed treatment and advanced disease at presentation. The patient's loss to follow-up after initial diagnosis illustrates how socioeconomic factors and healthcare access limitations can significantly influence disease progression and outcomes. Strengthening patient follow-up systems and community-based cancer surveillance programs may help reduce delays in care and improve outcomes in similar settings.

However, this report has several limitations. As a single case, its findings cannot be generalized to all patients with malignant phyllodes tumors. The delayed presentation and management within a resource-limited setting may not reflect disease progression or treatment outcomes in healthcare systems with earlier intervention and broader therapeutic options. Additionally, the rarity of spinal metastasis from malignant phyllodes tumors limits the availability of comparative literature and makes it difficult to draw definitive conclusions regarding optimal management strategies.

CONCLUSION

Malignant phyllodes tumors, although rare, may pursue an aggressive clinical course with widespread metastases, including to bone sites causing spinal cord compression. This case underscores the importance of early definitive surgical treatment with wide margins and strict follow-up to prevent advanced complications. Multidisciplinary palliative interventions, including corticosteroids, radiotherapy, and supportive therapies, can yield meaningful symptom relief and functional improvement, even in metastatic disease. Further research into targeted therapies is warranted to improve survival in such cases.

Declarations

Statement of Availability of Data

All data supporting the findings of this case report are included within the manuscript. Additional clinical details may be made available by the corresponding author upon reasonable request, in accordance with patient confidentiality and institutional ethical guidelines.

Author Contributions

DN and SO were responsible for drafting the case presentation. IAB, MGK, and DN contributed to writing the discussion section. SK, DN, DK, BRO, BTK, and MT participated in the clinical management of the patient. VN and SO reviewed the CT images. SK and DK critically reviewed and supervised the entire manuscript preparation process. All authors reviewed and approved the final version of the manuscript.

Competing interests

The authors declare that they have no competing interests.

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Ethics declaration and consent statement

Ethics approval was not required for this case report in accordance with local and institutional guidelines, this case report was prepared in accordance with the CARE guidelines and written informed consent was obtained from the patient for the publication of any potentially identifiable images or data included in this case report manuscript.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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