

# A Unique Case of Rheumatoid Pannus Formation in the Subaxial Cervical Spine

Nathan Leclair BS<sup>1</sup>, Joshua Knopf BS<sup>1</sup>, Michael Baldwin MD<sup>2</sup>, Faripour Forouhar MD<sup>3</sup>, Hilary Onyiuke MD<sup>4</sup>  
<sup>1</sup>UConn School of Medicine, <sup>2</sup>UCHC Department of Radiology, <sup>3</sup>UCHC Department of Pathology, <sup>4</sup>UCHC Department of Neurosurgery

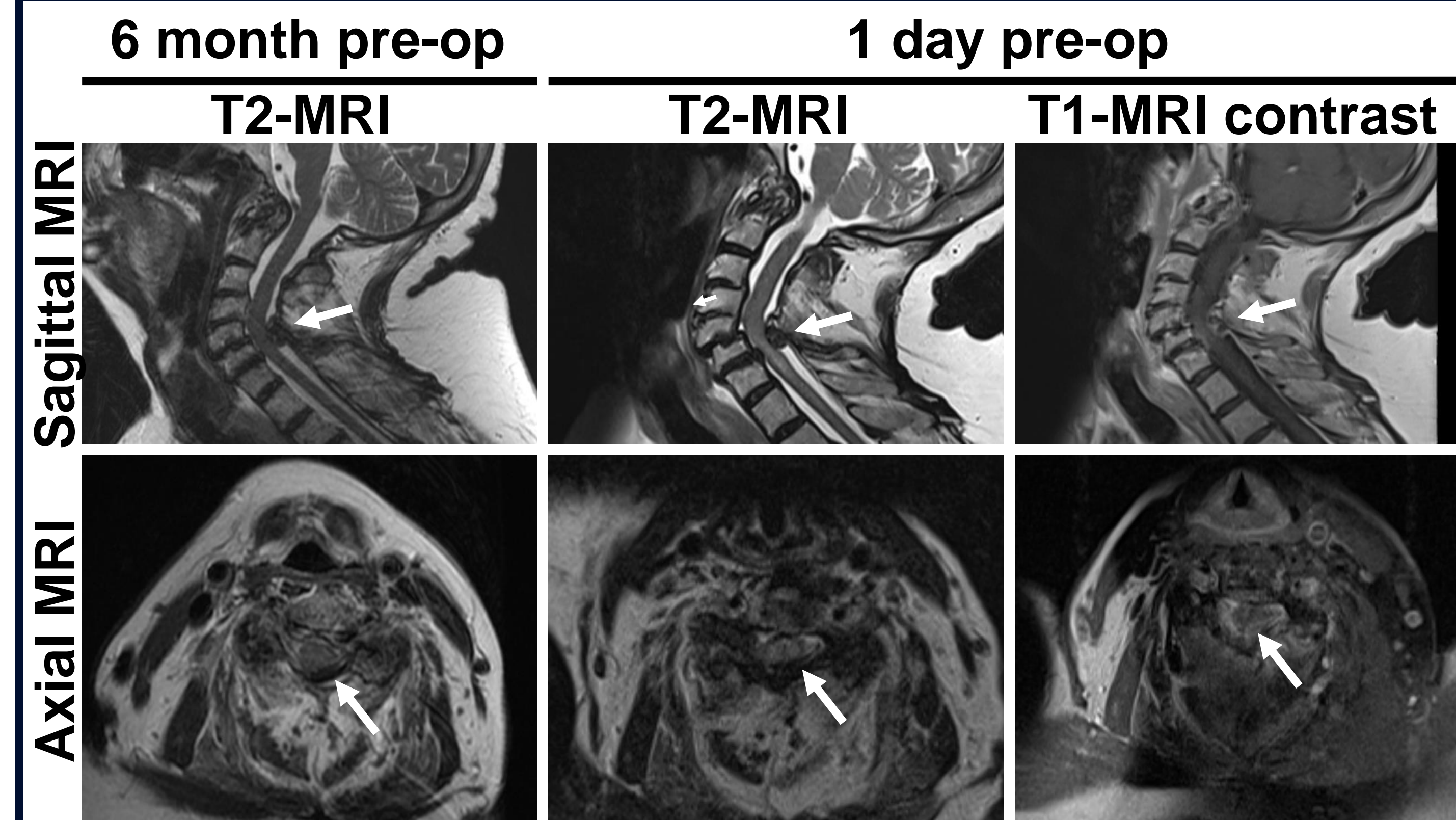
## Introduction

- Rheumatoid arthritis (RA) is a debilitating inflammatory condition characterized by joint and osseous erosion.
- RA affects the cervical spine frequently at the atlantoaxial joint (C1/C2) resulting in neck pain and myelopathy.
- Pannus is an invasive hyperplastic synovial tissue that causes osseous erosion of local bone, and can present in the cervical spine as focal dural enhancement but has never been described as a large subaxial mass.
- Treatment for RA involving the cervical spine relies on combined therapy aimed at the underlying systemic disease and surgical stabilization of affected joint segments.

## Case Report

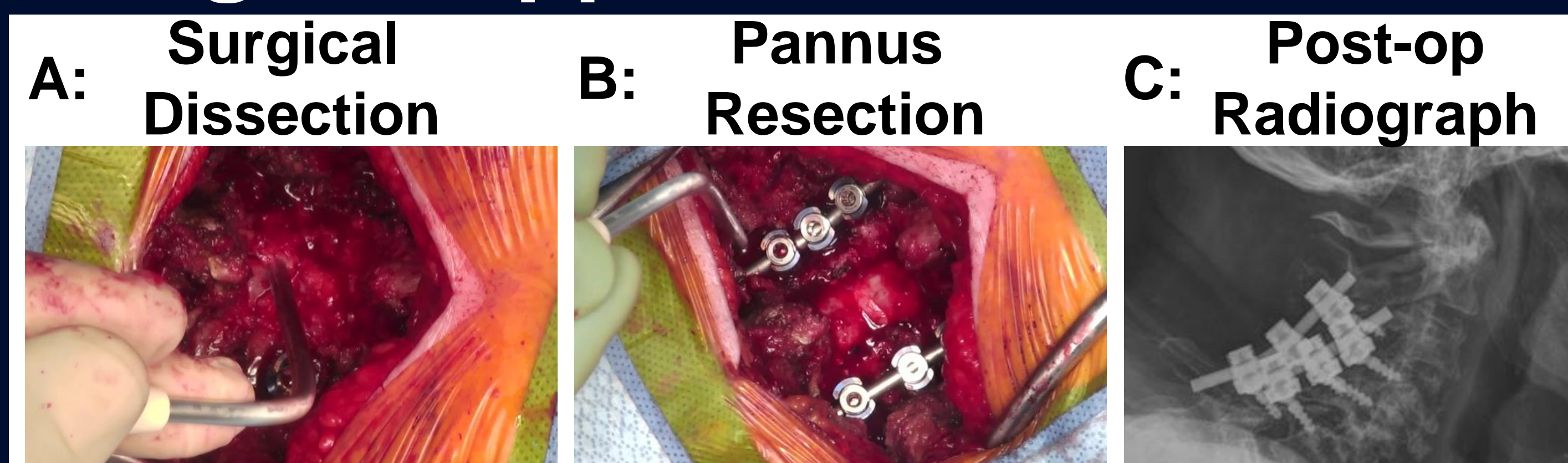
- 78 year old female with history of RA, treated with daily prednisone, and associated neck pain presented with rapid onset quadriparesis (Ranawat IIIB).
- MRI of the cervical spine revealed a heterogenous soft tissue mass involving the posterior aspect of the cord at C5/C6, and an associated 5mm anterolithesis, resulting in severe spinal cord compression.
- Surgical decompression and stabilization with resection of the pannus was performed, and the patient regained functional strength in all extremities.
- Pathologic evaluation of the resected mass confirmed the diagnosis of inflammatory pannus with invasion of the surrounding bone.

## Neuroimaging



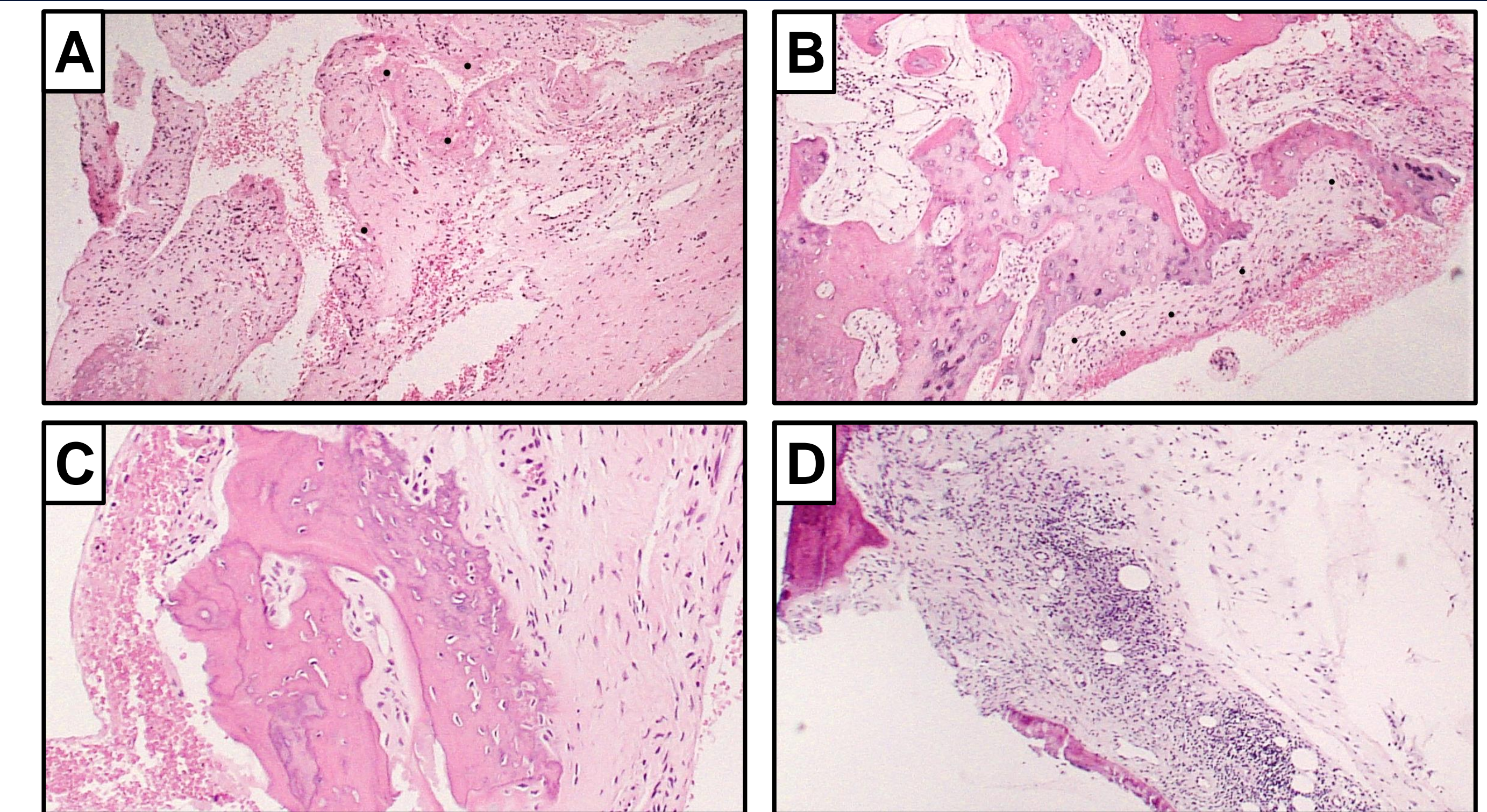
Visualization of subaxial pannus in sagittal and axial MRI as a posterior heterogenous multilobulated soft tissue mass at C5-6 (arrow). T2-weighted MRI from 6 month's prior to presentation and 1 day pre-op, as well as contrast enhanced T1-weighted imaging from 1 day pre-op.

## Surgical Approach



**A:** Image taken during posterior cervical decompression and fusion demonstrating the presence of subaxial soft tissue mass. **B:** Resection of the pannus off the spinal cord dura and placement of polyaxial lateral mass screws and rods. **C:** Post-op radiograph.

## Pathology of Cervical Pannus



**A:** Pannus development with edematous papillary fronds and fibrin deposition (40x, arrows). **B:** Pannus invasion of bone and cartilage (200x, arrows). **C:** Destruction of bone by the pannus (200x). **D:** Inflammatory response within the pannus with lymphocytic infiltration present (100x).

## Discussion

- Pannus presents in RA patients as focal enhancement of the underlying dura, however there are no descriptions of its appearance as an epidural mass.
- Pannus should be included in the differential of RA patients with a paraspinal mass and MRI can be used to differentiate pannus from other etiologies.
- Surgical management is aimed at resecting the pannus and stabilizing the associated joints.