

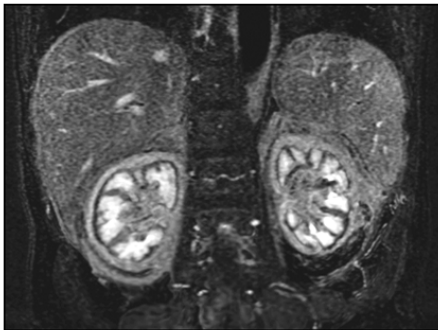
## MRI of Perirenal Pathology

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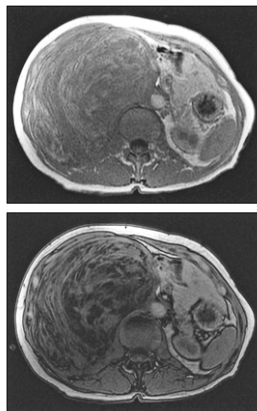
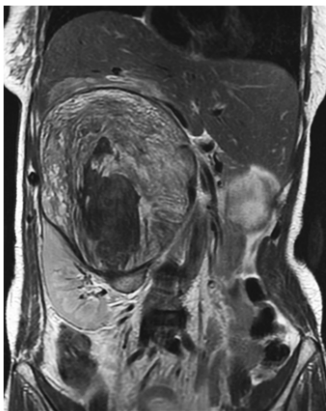
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**Purpose:** To describe and illustrate the use of MRI to characterize renal and extrarenal masses and other pathologic entities extending into the perirenal space.

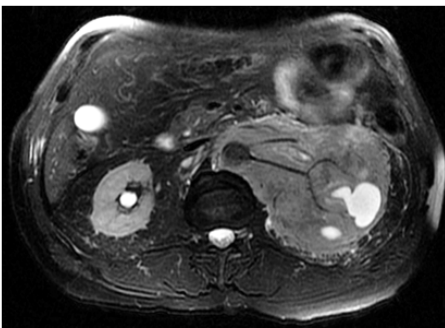
**Content:** This exhibit will review the anatomy of the perirenal space and briefly discuss technical considerations involved in assessing perirenal pathology with MRI. A range of common and uncommon perirenal pathologies will be described in a case presentation format, as illustrated below.



**Erdheim-Chester disease.** Coronal venous phase post-gadolinium 3D SPGR image reveals a ring of enhancing soft tissue surrounding the kidneys. Volume-rendered image from arterial phase 3D SPGR data demonstrates severe bilateral renal artery stenosis.



**Perirenal liposarcoma.** Coronal FSE T2-weighted image reveals a large heterogeneous mass compressing and displacing the right kidney. Axial in-phase and out-of-phase 2D SPGR images demonstrate heterogeneous signal loss on the out-of-phase image consistent with the presence of internal lipid.



**Perirenal lymphoma.** Axial fat-suppressed FSE T2-weighted image and axial arterial phase post-gadolinium 3D SPGR image reveal a homogeneous soft tissue mass surrounding the left kidney as well as the aorta and left renal artery. Note also moderate left hydronephrosis.

Additional cases include perirenal abscess, perinephric hematoma, urinoma, renal leiomyosarcoma, invasive renal cell carcinoma, renal sinus extramedullary hematopoiesis, renal lymphangiomatosis, and perirenal metastases.

**Summary:** MRI is often the best imaging technique to characterize perirenal pathology and to stage perirenal neoplasms. A definitive diagnosis can often be made, even with uncommon entities, and involvement of adjacent structures is well seen using the variety of available MRI techniques.