

# Fracture of A Semirigid Penile Prosthesis: MRI Findings and Review of the Literature

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Radyoloji

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## Özet

Semirigid ve şişirilebilir protezler erektil disfonksiyon tedavisinde kullanılmaktadır. Penil protezlere ait bazı komplikasyonlar bilinmektedir. Bu yazımızda, 64 yaşında bir erkek hastadaki semirigid penil protez fraktürü magnetik rezonans görüntüleme (MRG) bulguları ile sunulmaktadır. Hastanın MR görüntülerinde sol korpus kavernozum yerleşimli protez materyalinde açılma ve düzensizlik seçilmektedir. MRG özellikle klinik şüphe varlığında penil protez fraktürlerinin değerlendirilmesinde değerli bir yöntemdir. Literatür taraması sonucu elde ettiğimiz bilgilere göre, bu olgu MRG bulguları ile tanımlanmış ilk semirigid penil protezi vakasıdır.

**Anahtar kelimeler:** MRG, Semirigid penil protez Fraktür

## Abstract

Semirigid and inflatable prosthesis are implanted to treat erectile dysfunction. Some complications are known to occur related to penile implants. In this case we present the MRI findings of a semirigid malleable prosthesis fracture in a 64 year-old-man. MRI images demonstrated angulation and discontinuity of the prosthetic material in the left corpus cavernosum. MRI is a valuable method to evaluate penile implant fractures particularly if there is clinical doubt. To our knowledge this is the first case presenting the MRI findings of a semirigid penile prosthesis fracture in the literature.

**Keywords:** MRI, Semirigid penile prosthesis Fracture

## Introduction

Semirigid and inflatable prosthesis are implanted to treat erectile dysfunction<sup>1</sup>. We present the clinical and MRI findings of a very rare case of a semirigid penile prosthesis fracture. To our knowledge this is the first case presenting the MRI findings of a semirigid penile prosthesis in the English literature.

## Case Report

64 year-old-man, having a semirigid malleable prosthesis for 7 years, presented with sudden loss of erection during sexual intercourse. He noticed deformity of the penis and crepitation sound with palpation. The patient did not have a history of trauma or abnormal use of the implant. With the presumptive diagnosis of acute penile prosthesis fracture, he underwent MRI.

In 1.5 T MRI (Philips, Achieva, The Netherlands) corpus cavernosa had low signal intensity on T2-weighted images due to silicone component of the prosthesis. In the left corpus cavernosum the prosthetic material showed angulation and discontinuity, subcutaneous hemorrhage was also detected (Figure 1). Associated injuries in the corpus spongiosum or urethra were not present. The patient was treated conservatively. The deformed implant in the left corpus cavernosum was replaced with a new one five months later.



**Figure 1**  
Semirigid Pen

## Discussion

Although MRI is not accepted to be superior to clinical examination and ultrasonography for routine use, it has been described to be very beneficial in the evaluation of painful penile implant, acute low flow priapism, local staging of penile cancer, in complex cases of fibrosis and for the exact localization of penile fracture<sup>2</sup>.

In normal penis the three erectile bodies have intermediate signal intensity on T1-weighted images, and increased signal intensity on T2-weighted images. The tunica albuginea and Buck's fascia demonstrate low signal intensity on all spin echo sequences. MR imaging can demonstrate the position of semirigid and inflatable prosthesis. On T2-weighted images, the silicone in semirigid prosthesis has low signal intensity while the saline solution is clearly seen in inflatable prosthesis.

Complications such as infection, mechanical failure, penile deformities, extrusion of the cylinders and pain due to buckling of the implant have been reported. Diagnosis of the complication is based on physical examination and clinical history. Still imaging techniques are beneficial to evaluate the prosthesis and to plan the approach if surgery is necessary.

In the literature there are a few cases of fractures of the inflatable prosthesis. Kim et al reported bilateral fractures of inflatable prosthesis of two patients which were diagnosed with physical examination, absence of radiopaque fluid in the prosthesis meaning fluid leak and surgical exploration<sup>3</sup>. Goulding described unilateral fracture of inflatable prosthesis confirmed by surgical exploration<sup>4</sup>.

Akand et al. published fracture of the semirigid penile prosthesis which was detected on surgical exploration<sup>5</sup>.

The advantages of MRI to evaluate the complications of the penile prosthesis complications have been emphasized in the literature. Thiel et al. demonstrated that MRI, particularly T2-weighted sequence, was effective to evaluate penile anatomy and the etiology of the problems of the inflatable penile prosthesis as well as providing an excellent resource for surgical planning<sup>6</sup>. Moncada et al. investigated the utility of MRI for the assessment of penile prosthesis in patients with prolonged penile pain which demonstrated buckling of the deflated cylinders in 12 of 14 patients with pain and in one of the 51 patients without pain<sup>7</sup>. They also concluded MRI to be the most valuable imaging method in the diagnosis of the penile prosthesis complications due to its capability to demonstrate the anatomy in three orthogonal planes and high soft tissue contrast<sup>8</sup>.

To our knowledge this is the first case presenting the MRI findings of a semirigid penile prosthesis fracture in the English literature. MRI is a valuable imaging modality, which does not require ionizing radiation, to detect penile implant fracture particularly if there is clinical doubt.

## Acknowledgement

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## Information Presentation

As a poster at the 7th Balkan Congress of Radiology, Istanbul, 18th-22nd November, 2009.