

A magnetic mass within the bladder

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A search of the literature finds that there have been many case reports documenting a wide array of objects found within the bladder, ranging from magnets and paper clips to telephone and aluminum wire. The goal of treatment is to remove the object quickly, using the least invasive

method possible. Therefore, the ideal treatment is removal through endoscopic means; however, in some cases, the size, mobility and shape of the foreign body can prevent its removal endoscopically and more invasive means must be employed. We present a case of a patient who inserted 150 magnetic spherical beads into his bladder.

Key Words: bladder, foreign objects

Introduction

The majority of cases of foreign objects within the bladder are self-inserted for sexual pleasure, out of curiosity or due to psychiatric illness.¹ Published cases of foreign objects in the bladder include telephone wire, magnets, paper clips and an aluminum wire among others.¹ It is important that these are not left in place for extended periods of time as they may cause symptoms or increase the risk of infection. Ideally, the foreign body is to be removed endoscopically however in some cases the size, mobility and position of the object dictate its removal by invasive means. In this article we report a 19-year-old male who presented to the emergency department with 150 spherical magnetic beads within his bladder.

Case presentation

A 19-year-old male with documented psychiatric illness, presented to the emergency department with a 12 hour history of dysuria and voiding difficulties. On history he stated he had urgency, frequency and intermittency but no other lower urinary tract symptoms. Upon further questioning the patient mentioned that the previous evening he had been placing 5 mm spherical magnetic beads into his urethra

and several of these beads had become lodged within his bladder. He reported that he had done this several times previously but was always able to retrieve the beads by taking advantage of their magnetic properties.

On initial examination his vital signs were stable and he appeared comfortable. Upon physical exam he had a normal cardiac and respiratory exam. Examination also revealed a soft abdomen with mild suprapubic tenderness and his bladder was not distended. His CBC, creatinine and BUN were all within normal ranges. Urinalysis was normal. Plain film x-ray of his abdomen showed a mass roughly triangular in shape in his bladder with a maximum diameter of 4.2 cm, Figure 1.

He was taken to the operating room to have the mass of beads removed, Figure 2. The initial plan was to inspect the mass cystoscopically and then proceed with removal. However, the beads were tightly packed together and were unable to be separated. Thus the mass was far too large to be safely removed through the urethra. Instead the beads were removed from the bladder by open cystotomy. He tolerated the procedure very well. His postoperative course was uneventful. He was discharged from the hospital on the 6th day postoperatively.

Discussion

In reviewing the literature of foreign bodies within the urinary bladder there are many case reports describing a variety of objects including pencils, razors, adhesive tape and an ink cartridge.¹ Definitive management of these patients is complete removal of the objects by the least invasive means possible. Therefore, the

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Figure 1. Abdominal x-ray shows the foreign body in the bladder.

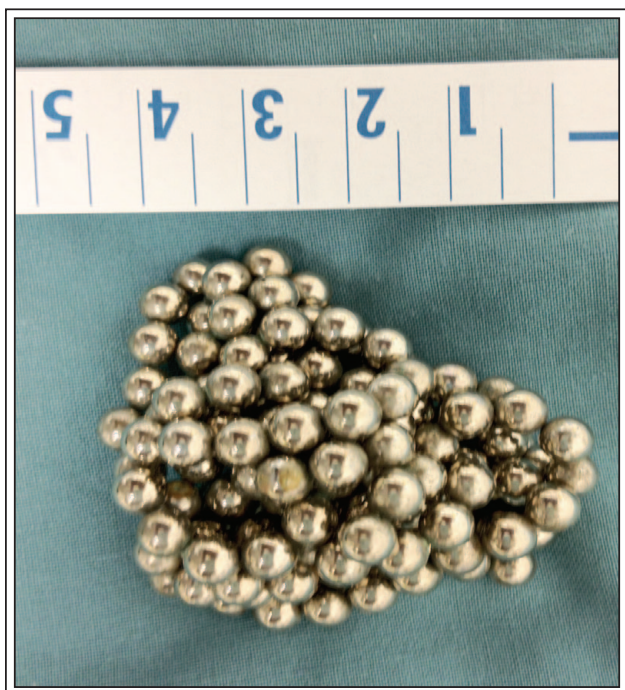


Figure 2. Photo of the magnets after the surgical removal.

ideal method of removal is through an endoscopic approach.²⁻⁶ In cases where the object is sharp, large or impacted, endoscopy is not possible and the object must be removed by laparoscopic, percutaneous or open approach.⁷⁻⁹

In this case, 5 mm round rare earth magnets were inadvertently placed in the patient's bladder. These products are sold in department stores, bookstores and hobbies stores throughout the country. They are primarily marketed as a craft or toy to make different sized and shaped objects.

The extremely strong magnetic properties of these neodymium rare earth magnets make this a challenging and unique case. As such, the 150 spheres had to be treated as a single entity measuring 4.2 cm x 4.1 cm. Preoperatively, it was therefore felt that cystoscopic, percutaneous or laparoscopic approaches would be impossible. In fact, when the mass was removed intact, it was extremely difficult to separate manually thus confirming that it would have been near impossible via a minimally invasive approach. This method is very similar to the one used by Delair et al to remove a 3 cm encrusted toy frog where used cystoscopy to visualize the removal of the frog through a small cystostomy.¹⁰

This case illustrates that definitive management of foreign bodies within the bladder depends up the size, shape, nature and mobility of the inserted object. □

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