Case report

Giant Bladder Stone Transurethrally Removed in One Piece Without Urethral Injury

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Abstract

We operated on an 87-year-old female suffering from a giant bladder stone. Her chief complaint was fever and lower abdominal pain, which was caused by lodgement in the urethra. The stone was easily removed in one piece without breakage or injury to the urethral orifice and urethra using forceps normally used for grasping bones in orthopedics. The stone measured 75×50×45 mm and was composed of magnesium ammonium phosphate. To our knowledge, this is the largest bladder and/or urethral stone that was transurethrally removed without being broken. Thus, forceps that are normally used for grasping bones in orthopedics can be used to remove giant bladder stones without leaving stone fragments.

Key words : giant bladder stone, transurethral removal, without breaking

Introduction

We present a case of incarceration of a giant bladder stone in the urethra. It was removed in

one piece without injuring the urethral orifice by using forceps normally used for grasping bones in orthopedics. The stone measured 75×50×45 mm, and this is the largest bladder and/or urethral stone that has been transurethrally removed without being broken.

Case Report

An 87-year-old female presented with a fever and lower abdominal pain. The patient had been in a nursing home after suffering a cerebral infarction. The bladder stone had been diagnosed 2 years earlier, but her informed family rejected further treatment. Other than cerebral infarction, hypertension, and constipation, she had no other significant history.

At the time of examination, a giant stone was visible from the external urethral orifice, and urine flowed around the side of the stone. A plain X-ray film revealed a 75×50 mm stone in the lower pelvic area (Figure 1a), and excretory urography showed an enlarged, rough bladder and slight hydroureter. These findings are consistent with neurogenic bladder dysfunction caused by cerebral infarction and increased pressure on bilateral ureteral orifices by incarceration of a giant bladder stone in the urethra.

The patient was referred to our hospital for medical attention and immediately underwent lithotripsy. The stone was easily distinguishable

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Figure 1 a, Plain film revealed a 75×50 mm stone in lower pelvic area. b, The stone was distinguishable from the external genitalia.

Figure 2 a, Forceps for grasping bones in orthopedics. b, The stone size was 75×50×45 mm, and it consisted of magnesium aluminum phosphate.

from the external genitalia in the lithotomy position (Figure 1b). The stone was tightly fixed on the external urethral orifice, and it was impossible to re-insert it into the bladder. Using forceps normally used for grasping bones in orthopedics (Figure 2a), we easily removed the stone without breaking it and without injuring the urethral orifice and urethra. The operation was followed by irrigation of the extended urethral orifice and vagina. The stone was 75×50×45 mm and consisted of magnesium ammonium phosphate (Figure 2b). A postoperative urological study could not be performed due to the patient's advanced age and her bedridden state. We could only recommend that she drink many liquids to prevent a recurrent bladder stone.

Discussion

To our knowledge, this is the largest bladder and/or urethral stone transurethrally removed without being broken. Kato et al. reported that they had removed giant bladder stones from the external urethral orifices of two females using forceps. One stone was 42×40×33 mm in size, and in the other case, there were two stones, 30×21×20 mm and 32×24×20 mm.¹⁾ Motomori et al. reported on a female patient from whom they removed a bladder stone measuring 67×27 mm from the external urethral orifice using forceps.²⁾ The stones in these cases were composed of magnesium ammonium phosphate.

In our case, the bladder stone was thought to have grown to a giant size because of co-existing

neurogenic bladder dysfunction and chronic urinary infection during a long bedridden state. Stones composed of magnesium ammonium phosphate are highly related to urinary tract infections. Imperception caused by cerebral infarction might have also have promoted the growth of the stone^{1,2)}. Long-term fixation of the stone in the urethra and urine leakage around the side of the stone by the involuntary contraction of the bladder gradually extended the urethral orifice.

In our case, an attempt to manually remove the stone was not successful. However, because of the long period of incarceration of the stone, the urethra of the patient was widely dilated. As a result, the stone could be quickly removed without injuring the urethral orifice or the urethra.

By using forceps normally used for grasping bones in orthopedics, the stone was removed without being broken and leaving no stone fragments. This is a very rare case, but this procedure should be considered if the stone incarceration period in female cases is prolonged.

References

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