Primary Vaginal Urinary Calculus following Abdominoperineal Resection of Rectum

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Key Words

Vaginal calculus
Abdominoperineal resection
Urinary incontinence

Abstract

A rare case of primary vaginal calculus is presented. The case is unusual since it occurred after abdominoperineal resection for carcinoma rectum. The mechanism of stone formation in the patient has been discussed.

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Introduction

Primary vaginal calculus is a very rarely encountered clinical entity [1–4] which has no demonstrable vesico-vaginal fistula and no congenital or acquired vaginal stenosis. The more common secondary vaginal stones are usually formed by deposition of urinary salts around foreign bodies introduced into the vagina. Rarely a bladder stone may erode through the vesicovaginal septum to present in the vagina [1]. In 1970, Navani and Tessier [5] reviewed 24 cases of vaginal calculi of which the majority were associated with vesicovaginal fistula. The rarity of a primary vaginal calculus following abdominoperineal resection of the rectum prompted us to report the following unusual case.

Per vaginal examination revealed a smooth hard mass in the vagina which was thought to be recurrence of the original tumour. The vestibule was found to be rather deeply situated with retracted ure-thral orifice. There was no narrowing of the vaginal introitus.

Per speculum examination revealed this mass to be a stone. It was removed without any difficulty under general anaesthesia and the vagina irrigated with sterile saline to remove any broken fragments. Cystoscopy revealed diffuse cystitis but no evidence of fistulous communication with the vagina. On further investigation with intravenous administration of methylene blue, no dye could be seen on the vaginal swab thereby confirming the absence of any fistulous communication. Intravenous pyelogram was essentially normal. Urine culture showed growth of *Escherichia coli* sensitive to ampicillin.

The stone removed was ovoid in shape, measuring $5.7 \times 4.5 \times 4.2$ cm and dirty white in colour (fig. 1). Sectioning of the stone did not reveal any foreign body, indicating that it had formed in situ. The cut surface gave a laminated appearance. On chemical analysis it was found to consist of calcium, magnesium and ammonium phosphates.

Case Report

A 56-year-old female was admitted to the surgical ward with history of bloody vaginal discharge, mild pain and discomfort in the perineal region for the last 6 months. She had increased frequency of micturition associated with some degree of incontinence of urine following an abdominoperineal resection 2½ years earlier for an adeno-carcinoma of the rectum.

Discussion

Contamination of the vagina with urine and faeces is well documented in young girls [6, 7] but still a normal vagina is a rare site for stone formation. The natural slight pollution of the vagina during micturition may become aggravated by congenital or acquired vaginal stenosis

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Fig. 1. Primary vaginal calculus.

which facilitates stagnation of urine and subsequent stone formation. Dexeus and Dalmau [2] reported a case of primary vaginal calculus following traumatic amputation of the distal one-third of the urethra associated with narrowing of the vaginal orifice as a result of fibrosis. Miller [3] in 1973 described a primary vaginal stone in a 17-year-old girl who had spastic quadriplegia and incontinence leading to constant urinary soiling of the vagina due to her prolonged recumbent posture. Weaver [4] reported a case of primary vaginal stone following abdominoperineal excision of the rectum with total hysterectomy. He ascribed it to urinary incontinence and deep location of the vestibule as a result of previous surgery thus favouring urinary contamination of the vagina.

The present case is similar to the one described by Weaver. In our patient there was no evidence of vesico-vaginal fistula or narrowing of the vaginal introitus. The mild urinary incontinence might have resulted from inadvertent damage to the pelvic nerves and the sphincter mechanism of the urinary bladder during abdominoperineal resection of rectum. An abnormally deeply situated urethral orifice and vestibule were the result of intrapelvic fibrosis and contracture following radical excision of the rectum. We believe that under such circumstances as urinary incontinence, increased frequency and deep location of external urethral orifice, there would be a natural tendency for the urine to collect at the introitus, especially in the supine position, thus leading to vaginal contamination. This constant urinary soiling of the vagina in our patient led to a gradual deposition of urinary salts to form a primary vaginal stone.

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