

Mayer-rokitansky-kuster-hauser syndrome with hyperprolactinemia

Dania H. Al-Jaroudi, MBBS, ABOG, Ayda M. Nasser, MBBS.

ABSTRACT

إن ترافق متلازمة ماير روكتنسكي كوستر هاوسر (MRKH) مع فرط برولاكتين الدم نادر جداً. هنا نستعرض حالة فتاة سعودية تبلغ من العمر 18 عاماً، غير متزوجة، عذراء، حضرت مع والدتها بطلب استشارة طبية بشأن غياب الطمث لديها. كانت لديها أثداء طبيعية، شعر إبط وعانة متطور بشكل طبيعي، فرج طبيعي مع إهليلج وأشفار طبيعية، ولكن كان لديها مهبل اعور بطول 2cm تقريباً. أظهر تصوير الرنين المغناطيسي للحوض مبايض ذات مظهر طبيعي ورحم صغير بدون نسيج بطاني، وعنق رحم ومهبل صغيرين. كما أظهرت الاستقصاءات مستويات عالية للبرولاكتين في المصل (1,517mIU/L). نتائج تصوير الرنين المغناطيسي MRI للتحقق كان طبيعياً. تم تشخيص المريضة على أنها حالة نقص تصنع قناة مولر درجة 1 (AFS). بعد البحث الموضوعي المكثف، قدمنا أول حالة مسجلة لمتلازمة ماير روكتنسكي كوستر هاوسر (MRKH) على هيئة نقص تصنع للرحم مع فرط برولاكتين الدم.

Mayer-Rokitansky-Kuster-Hauser Syndrome in association with hyperprolactinemia is very rare. An 18-year-old, Saudi, single, virgin female was accompanied by her mother seeking medical advice regarding absent menses. She had normal breasts, normal axillary and pubic hair, normal vulva, urethra, and labial folds, however, the vagina was blind, approximately 2 cm length. Pelvic magnetic resonance imaging showed normal appearing ovaries, a small uterus and small cervix and vagina. Investigations showed initial high serum prolactin of 1,517 mIU/L. Cranial MRI was normal. The patient was diagnosed as mullerian hypoplasia class I American Fertility Society. After an extensive literature search, we present a unique case of concomitant occurrence of MRKH, in the form of mullerian hypoplasia, and hyperprolactinemia.

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From the Department of Reproductive Medicine Unit, Minimally Invasive Gynecologic Surgery, (Al-Jaroudi), Department of Obstetrics and Gynecology (Nasser), Women's Specialized Hospital, King Fahad Medical City, Riyadh, Kingdom of Saudi Arabia.

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Address correspondence and reprint request to: Dr. Dania H. Al-Jaroudi, Consultant Obstetrics and Gynecology, Reproductive Medicine Unit, Minimally Invasive Gynecologic Surgery, Reproductive Medicine Unit, Women's Specialized Hospital, King Fahad Medical City, PO Box 59046, Riyadh 11525, Kingdom of Saudi Arabia. Tel. +966 (1) 2889999 Ext. 8503. Fax. +966 (1) 2889999 Ext. 3714. E-mail: daljaroudi@kfmc.med.sa

Mayer in 1829, followed by Rokitansky in 1838, were the first to describe mullerian agenesis or Mayer-Rokitansky-Kuster-Hauser syndrome (MRKH).¹ The syndrome is defined as the absence of the vagina with variable uterine development that results from agenesis or hypoplasia of the mullerian duct system.² Classically, affected women have primary amenorrhea with normal secondary sexual characteristics,³ hypothalamic-pituitary-ovarian (HPO) axis, and 46XX female karyotype.⁴ We report a female with MRKH in association with hyperprolactinemia. Hyperprolactinemia in association with uterine aplasia or hypoplasia may be pathogenetically linked during embryonic development, resulting in a unique syndrome. In this report, we present a rare case of MRKH in association with hyperprolactinemia thus emphasizing that 2 pathologies resulting in amenorrhea could coexist.

Case Report. An 18-year-old, Saudi, single, virgin female was accompanied by her mother seeking medical advice regarding absent menses. She denied cyclic pelvic pain or bleeding. Her sexual development and growth were appropriate for her age. No previous medical or surgical problems were encountered during her lifetime. Her parents are second cousins and her mother experienced menarche at the age of 16. She has 5 younger sisters and one brother. Her 16-year old sister underwent menarche at the age of 14 years. There was no family history of primary amenorrhea, congenital defects, or chromosomal anomalies. She weighed 60 kg, and her height was 170 cm, with no dysmorphic features. She had normal breasts, axillary and pubic hair, vulva, urethra, and labial folds, however,

the vagina was blind with approximate 2 cm length. Upon abdomino-rectal examination, neither a uterus nor other pelvic structures were palpable. Investigations showed an initial high serum prolactin of 1,517 mIU/L, and a reduced luteinizing hormone (LH) level of 2.73 IU/L (2.1-12.6 IU/L). Follicle stimulating hormone (FSH) (5.37 IU/L), estradiol (523.1 pmol/L), testosterone (0.261 nmol/L), and thyroid stimulating hormone (TSH) (1.61 mIU/L) were within normal limits. Repeat prolactin was 804.1 mIU/L. Her complete blood count, renal profile, and liver function tests were normal. Ultrasound revealed normal-sized ovaries and a uterine (1.5 cm x 1.3 cm) body-to-cervix ratio of about 1:1, suggesting a rudimentary uterus. Pelvi-abdominal CT scan revealed normal kidneys and a small uterus, cervix, and vagina. Pelvic magnetic resonance imaging (MRI) showed normal appearing ovaries, a small uterus with no endometrial tissue, and small cervix and vagina with no detectable abnormality. Cranial MRI revealed normal optic chiasm, pituitary, hypothalamus, and cavernous sinuses. Her karyotype was 46XX. The patient was diagnosed as mullerian hypoplasia class I according to the standard American Fertility Society classification.⁵ We are reporting a case of MRKH syndrome in the form of uterine hypoplasia in association with hyperprolactinemia. After being treated with twice-weekly cabergoline for 3 months, her prolactin level decreased to 332 mIU/L. Despite challenge with both progesterone and estrogen, the patient denied any vaginal bleeding, confirming the presence of a non-functioning endometrium.

Discussion. Mayer-Rokitansky-Kuster-Hauser syndrome refers to the lack of mullerian development

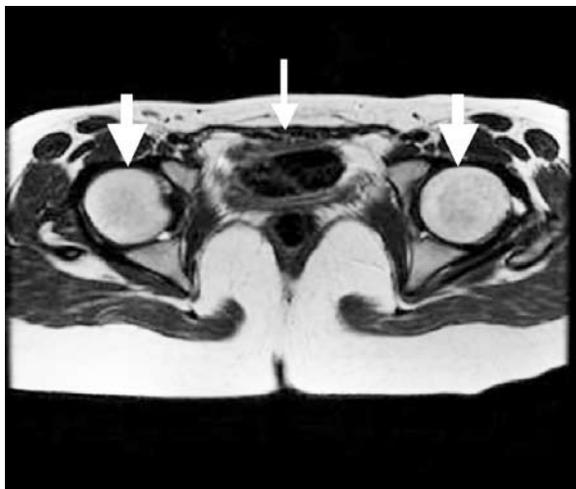


Figure 1 - Magnetic resonance imaging of the pelvis showing normal ovaries (thick side arrows), small uterus, small cervix and vagina (thin center arrow).

in individuals with primary amenorrhea, no apparent vagina, and normal growth and development.³ The syndrome can be divided in 2 groups: the first, or typical, involves absence of uterus and vagina; and the second, or atypical, involves additional renal, skeletal, and ear abnormalities.⁶ Women with mullerian agenesis have normal 46 XX karyotype, normal external genitalia and function, and vaginal agenesis with variable mullerian duct abnormalities.² The incidence of MRKH has been estimated from 1 in 4,000 to 1 in 20,000 female births worldwide.⁷ The cause of MRKH is unknown, however, its etiology may include environmental, genetic, hormonal, or receptor factors.⁴ The most common presentation is primary amenorrhea at 15-18 years, with normal growth and pubertal development.² Most patients have a rudimentary, non-functioning uterus similar to that reported in our patient, while 2-7% have a functioning uterus.⁸ As opposed to our patient, whose high prolactin most likely led to decreased LH, the function of the HPO axis is consistently reported as normal in patients with MRKH.^{4,9} The only previous report of hyperprolactinemia in MRKH patients was from 1979, describing 2 MRKH patients with complete agenesis in association with elevated hyperprolactinemia and higher than normal prolactin levels.⁹ The authors suggested there may be a relationship between MRKH and prolactin secretion. Radiological evaluation should be included in the management of MRKH. Ultrasound of the pelvis may be carried out to depict the size and symmetry of the uterus,⁸ however, MRI has been more widely used due to its greater accuracy.¹⁰ Laparoscopy is no longer indicated.^{3,8} Management of patients with MRKH involves psychosocial support and correction of the anatomic abnormality. Emphasis must be placed on psychological assessment, counseling, and supporting the patient in dealing with this overwhelming diagnosis.^{2,3} Both surgical and non-surgical methods are available to correct vaginal agenesis.² Graduated vaginal dilation using the Frank technique or Ingram modification has been successful in allowing satisfactory intercourse. An alternative involves surgically creating a neovagina. Several procedures have been proposed. McIndoe, the most commonly carried out, utilizes a split-thickness skin graft from the buttocks.² After an extensive literature search, we present a unique case of concomitant occurrence of MRKH, as mullerian hypoplasia, and hyperprolactinemia. Almost 30 years following the only other reported case in the literature of MRKH and hyperprolactinemia, we agree that perhaps there is a relationship between them, however, a definite conclusion is precluded due to the limited number of patients. This brings us to emphasize the importance of physical examination in young patients presenting with amenorrhea. Primary amenorrhea in a young female needs a thorough workup since 2 etiologies in the same

person leading to the same pathology could coexist. Finally, due to the multifactorial proposed etiologies of MRKH, concurrent hormonal disturbances can occur, as seen in our patient. Hyperprolactinemia in association with uterine aplasia or hypoplasia may be pathogenetically linked during embryonic development, resulting in a unique syndrome. Further studies are needed to clarify a possible complex association of mullerian malformation and hormonal variation. This case may represent a distinct syndrome from those previously defined.

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Case Reports

Case reports will only be considered for unusual topics that add something new to the literature. All Case Reports should include at least one figure. Written informed consent for publication must accompany any photograph in which the subject can be identified. Figures should be submitted with a 300 dpi resolution when submitting electronically or printed on high-contrast glossy paper when submitting print copies. The abstract should be unstructured, and the introductory section should always include the objective and reason why the author is presenting this particular case. References should be up to date, preferably not exceeding 15.