Case Report

Galactorrhea in a 14-Year-Old Girl

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The authors report a 14-year-old girl who had galactorrhea with regular menstruation. Furthermore, this galactorrhea case was associated with hyperprolactinemia and prolactinoma. The patient tolerated and responded well to therapy with bromocriptine. The serum prolactin levels decreased from 103.27 ng/mL to 24.25 ng/mL after 8 weeks of treatment and 12.48 ng/mL after 6 months of treatment. No pituitary tumor was demonstrated after 12 months of therapy and the galactorrhea had not recurred 1 year after ending the bromocriptine treatment.

Keywords: *Galactorrhea, Prolactinoma, Teenager*

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Galactorrhea is the secretion of breast milk in men or women not breast feeding an infant. It can occur either unilaterally or bilaterally, be profuse or sparse. Galactorrhea occurs most commonly in adults and is rare in children. The most common pathologic cause of galactorrhea is hyperprolactinemia, which is the result of a secreting pituitary tumor or prolactinoma[1]. In the pediatric/adolescent age, prolactinomas are rare, representing about half of all pituitary adenomas and account for less than 2% of intracranial tumors[2,3]. In a large series of 26 patients with prolactinomas under the age of 18 years, 12 patients had galactorrhea combined with signs and symptoms associated with hyperprolactinemia (amenorrhea, menstrual irregularities, growth arrest, delayed puberty, osteopenia and gynecomastia in a boy)[4]. No one presented with only galactorrhea. To the authors' knowledge, there is only one report in Thailand of a 15-year-old boy with idiopathic hyperprolactinemia who presented with gynecomastia and galactorrhea from the right breast[5]. Here the authors report a case of galactorrhea in a 14-year-old girl who had prolactinoma and regular menstruation. Therefore, this is the first report of galactorrhea associated with prolactinoma in the pediatric age group in Thailand.

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Case Report

A 14-year-old girl presented with bilateral nipple discharge for 4 days. Her parents were normal but the patient had congenital right hip disarticulation and left transverse femoral amputation. She had been doing well in school despite being restricted to a wheelchair. Four months prior to this admission, she had a right ovarian cyst. A cystectomy was successfully performed. She had complained of breast enlargement for 5 months but no history of administration of any potentially causative medications. She had been having normal and regular menstruation, and her last menstrual period was 10 days prior to admission. Physical examination revealed an active girl in a wheel chair, cooperative, and with normal vital signs. Pubertal staging corresponded with Tanner stage . Milk ejection was observed from the breasts with mild tenderness and without any mass. No abnormal neurologic signs or abdominal mass were found and the other findings were unremarkable.

The complete blood count, urinary analysis, and blood for urea nitrogen, creatinine, electrolytes, calcium, phosphate, thyroid function tests, and fasting blood glucose level were within normal limits. A

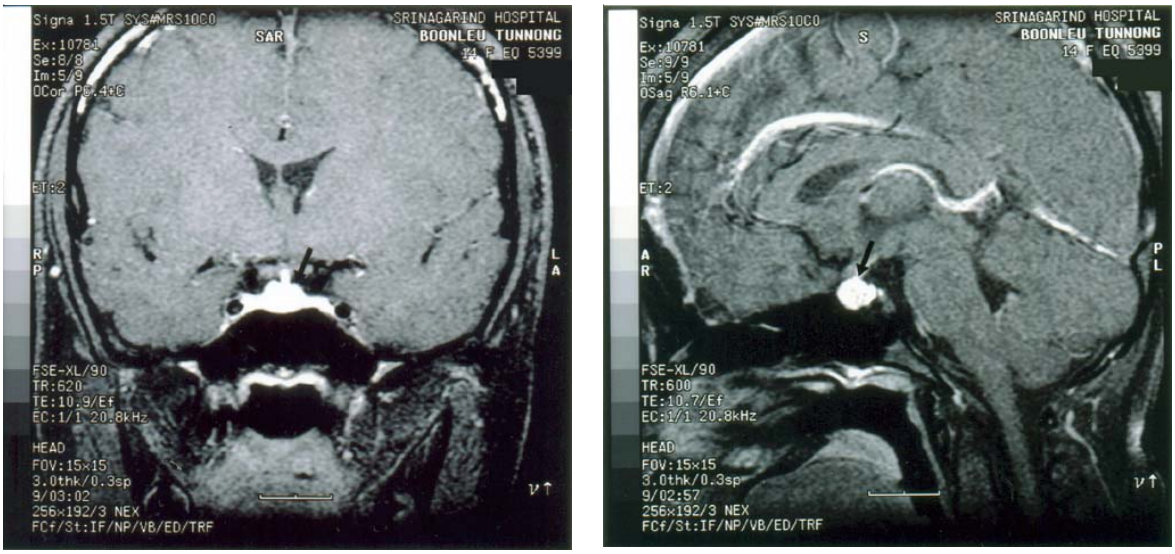

Fig. 1a, b Intrasellar mass diameter 1 cm suggestive pituitary adenoma

pregnancy test was performed with negative result. The serum prolactin was 103.27 ng/mL, follicular stimulating hormone 5.66 mIU/mL, lutienizing hormone 5.31 mIU/mL and parathyroid hormone 49.06 pg/mL. Ultrasonography of the pelvis revealed a normal size uterus and ovaries and no adnexal mass. An MRI of the brain showed an intrasellar mass 1 cm in diameter, corresponding to pituitary adenoma (Fig. 1).

The patient was treated with bromocriptine 2.5 mg per oral, 1 tab twice daily. She responded well, and had no more galactorrhea after 4 weeks of treatment. Eight weeks and 6 months later, the serum prolactin level had decreased to 24.25 and 12.48 ng/mL, respectively. MRI of the brain showed no pituitary tumor after 12 months of therapy. Bromocriptine was then discontinued. One year later, the serum prolactin level was within normal range.

Discussion

This teenage girl presented with milk secretion without pregnancy, which is compatible with galactorrhea. After infancy, galactorrhea is usually medication-induced and can occur in either males or females. The most common pathologic cause of galactorrhea is hyperprolactinemia, which is the result of pituitary adenoma or prolactinoma[1]. Other causes include drug-induced, neurogenic stimulation, primary hypothyroidism and chronic renal failure[6,7]. Inducing medications include antipsychotics, antidepressants, antihypertensive agents and medications that increase bowel motility[8,9]. Patients can present with galactorrhea, irregular menstruation, delayed puberty, infertility, osteopenia or osteoporosis, and symptoms and signs of tumor expansion in macroadenoma[10,11]. Delayed growth is rarely observed in teenagers with pituitary adenomas[12]. Galactorrhea is the symptom at onset for 46-59% of girls[4]. Careful history taking and physical examination followed by laboratory tests are helpful when searching for the cause of galactorrhea. All girls with galactorrhea should be tested for pregnancy, monitored for serum prolactin, thyroid stimulating hormone level and magnetic resonance image of the sella turcica. In this case, hyperprolactinemia was diagnosed when serum prolactin levels were above 20 ng/mL and the levels varied from 70 to 3,300 ng/mL in prolactinoma[4]. The presented patient had galactorrhea and hyperprolactinemia from prolactinoma, which is the most common cause of galactorrhea. In the large majority of patients with prolactinomas, both micro- and macro-prolactinomas can be successfully treated with dopaminergic drugs as first-line, with normalization of prolactin secretion and gonadal function, and with significant tumor shrinkage in a high percentage of cases[4-6,12-17]. The most commonly used dopamine agonists are bromocriptine, pergolide, quinagolide and cabergoline. The authors treated the presented patient with bromocriptine and she responded well with a lowered prolactin level within 8 weeks. Bromocriptine is available in all hospitals in Thailand. This medication shrinks prolactinomas by reducing tumor cell size, including cytoplasmic, nuclear, and nucleolar areas[18]. Prolactin

mRNA and synthesis is inhibited, exocytosis reduced, prolactin secretory granules decreased, and rough endoplasmic reticulum and Golgi apparatus involuted. The net effect is reduced cell volume[19]. The serum prolactin level should return to normal and shrinkage of the tumor occur within 6-12 months[4]. Some patients cannot tolerate the side effects of bromocriptine especially the nausea and vomiting. Therefore, cabergoline is an alternative. Unfortunately cabergoline is not available in Thailand, it can be used once-a week with better tolerability and compliance[20]. Following withdrawal of the dopamine agonist therapy in adults with microadenoma, 64% developed recurrence in an average of 9.6 months (range, 1-44), while 36% remained in remission beyond 1 year (mean, 3.6; range, 1-7)[21]. A multicentre study of 26 children with prolactinoma and where 7 patients, who had tumor removal, were first seen by the neurosurgeon, all still had hyperprolactinoma. All patients received bromocriptine as the initial therapy. Bromocriptine induced normoprolactinemia in 10 of 26 patients while poor response in the other patients was caused by the poor drug compliance and intolerable side effects. These patients were given quinagolide (5 patients) and cabergoline (7 patients) that were effective in normalized prolactin concentrations and tumor size[4]. All patients were on treatment for a period of 2 to 4 years. Only 4 patients presented moderately hyperprolactinemia. Normal pregnancy and outcome occurred in 2 patients during therapy. Therefore, treatment with dopamine agonists should be the first therapeutic option in young patients with prolactinoma. Transphenoidal surgery is usually reserved for patients intolerant of, or resistant to, dopamine agonists or patients with a large extrasellar extension[4,12].

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อาการน้ำนมไหลในเด็กหญิงอายุ 14 ปี

อวยพร ปะนะมณฑา, นวรัตน์ ภควุฒิ

อาการน้ำนมไหลพบได้น้อยในวัยเด็ก รายงานนี้ได้นำเสนอผู้ป่วยเด็กหญิงอายุ 14 ปี มีอาการน้ำนมไหลโดยมีประจำเดือนปกติ สาเหตุเกิดจากการมีระดับซีรัมโพรแล็กตินสูงมากกว่าปกติจากเนื้องอกโพรแล็กตินที่ต่อมใต้สมอง ผู้ป่วยรายนี้ได้รับการรักษาด้วยยาโบรโมคริพติน ซึ่งผู้ป่วยตอบสนองต่อการให้ยาโดยมีระดับซีรัมโพรแล็กตินลดลงเรื่อย ๆ จากระดับ 103.27 นาโนกรัม/มิลลิลิตร เป็น 24.25 และ 12.48 นาโนกรัม/มิลลิลิตร ในเวลา 8 สัปดาห์และ 6 เดือน หลังการรักษาตามลำดับและตรวจไม่พบก้อนเนื้องอกที่ต่อมใต้สมองในระยะเวลา 12 เดือน ผู้ป่วยไม่มีอาการน้ำนมไหลอีกหลังการหยุดยาโบรโมคริพตินได้ 1 ปี