Case Reports

Ovarian cysts needing surgical intervention in two girls with central precocious puberty receiving treatment

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Introduction

The stories of 2 girls with central precocious puberty (CPP) who developed ovarian cysts while on treatment with a gonadotrophin releasing hormone analogue (GnRHa) are presented.

Case 1

DA developed secondary sexual characteristics at 6 years and 2 months of age which progressively increased. At presentation, her height was on the 75th percentile and she had stage III breast development with stage II pubic hair. Her bone age was advanced to 8 years and 10 months at a chronological age of 6 years and 2 months. Abdominal and pelvic ultrasonography and neuro-imaging were normal and her hormone profile confirmed gonadotrophin dependant precocious puberty. She was started on GnRHa (Goserellin) at 6 years and 8 months of age. Apart from intermittent abdominal pain, she did not have any side effects of the treatment. Pubertal development arrested and over the years her height centiles reduced from 75th to 25-50th. Because of the intermittent abdominal pain, although examination was normal, she had 2 abdominal ultrasound scans, the last one at 10 years of age which was normal with normal ovaries. One month later as the abdominal pain was recurrent and persistent a repeat scan was done which revealed a right adnexal mass. CT was suggestive of a benign cyst of the right ovary with no calcification or fat. Tumour markers (αFP, βhCG and CA 125) were all normal. Laparotomy performed 3 months later showed a multilocular right ovarian cyst (28mm×42mm) which was enucleated and the ovary was reconstructed. Histology confirmed a simple serous cyst with focal mucinous areas.

Goserellin was continued and she had regular ultrasound scans which remained normal. At 11 years, treatment was discontinued at her request. She was on the 25th percentile for height which was within the target height range (midparental centile). Six months after stopping treatment menarche started and thereafter she continued to have regular menstruation.

Case 2

U.M. presented at 4 years of age with a 6 month history of progressively increasing thelarche and pubarche. Her height was on the 90th percentile with stage III breast and pubic hair development with a bone age of 8 years and 10 months. Investigations confirmed central precocious puberty with normal abdominal and pelvic ultrasound scans and neuro-imaging. Goserellin was commenced at 4 years and 3 months of age. There were no side effects of treatment and there was no further progression of puberty. At 6 years and 7 months (which was 2 years and 4 months after starting treatment) she was noted to have abdominal distension and the mass that was detected clinically was confirmed as a left sided ovarian cyst on ultrasonography and CT. Cystectomy was performed and histology confirmed a benign serous cyst. Treatment was continued and she remained asymptomatic with normal serial scans. When treatment was stopped at 11 years and 1 month at the parents' and patient's request, her height was on the 10th percentile which was greater than the target height (midparental centile). She had not started menstruation at the time of reporting which was 10 months after stopping treatment.

Discussion

Gonadotrophin dependent precocious puberty or CPP is onset of puberty in girls less than 8 years of age.

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This results in an early onset of the pubertal growth spurt associated with an increase in height velocity and skeletal maturity. Treatment of this condition is with regular administration of a gonadotrophin releasing hormone analogue (GnRHa) which effectively halts the progression of puberty[1].

Physiological or functional ovarian cysts are benign and are the commonest ovarian lesions found in children and adolescents[2]. Endocrine manifestations associated with ovarian lesions are rare and include precocious/early puberty[2] and six or more follicles up to 10mm in diameter have been seen in girls with CPP [3,4]. However, symptomatic large ovarian cysts needing surgical intervention have not been reported previously. Adverse effects of GnRHa therapy in children are minimal and mostly due to local reactions such as erythema, indurations and sterile abscess formation [3,5]. Ovarian cysts have not been reported in association with treatment of CPP but polycystic-like ovaries have been rarely seen in association with GnRHa therapy[3]. Formation of ovarian cysts ≥15mm in diameter has been reported following GnRHa treatment in IVF cycles[6].

Our patients' abdominal scans were normal at presentation and they developed the ovarian cysts 3 years and 5 months and 2 years and 4 months after starting treatment.

Although causality between development of ovarian cysts and GnRHa therapy cannot be established, it would be advisable to keep these girls under regular ultrasonographic surveillance while on therapy.

References

1 Garner C. Uses of GnRH agonists. *J Obstet Gynaecol Neonatal Nurs*.1994; **23**(7): 563-70. http://dx.doi.org/10.1111/j.1552-6909.1994.tb01922.x

2 de Silva KSH, Kanumakala S, Grover SR, Chow CW, Warne GL. Ovarian lesions in children and adolescents – An 11 year review. *J Pediatr Endocrinol Metab*. 2004; **17**(7): 951-57. http://dx.doi.org/10.1515/JPEM.2004.17.7.951

3 Antoniazzi F, Zamboni Giorgio. Central precocious puberty; Current treatment options. *Pediatr Drugs*. 2004; **6**(4):211-31. http://dx.doi.org/10.2165/00148581-200406040-00002

4 Herter LD, Golendziner E, Flores JA, Moretto M, Di Domenico K, Becker E Jr et al. Ovarian and uterine findings in pelvic sonography: comparison between prepubertal girls, girls with isolated thelarche and girls with central precocious puberty. *J Ultrasound Med*. 2002; **21**(11):1237-46.

5 Tonini G, Lazzerini M. Side effects of GnRH analogue treatment in childhood. *J Pediatr Endocrinol Metab*. 2000; **13** Suppl 1:795-803. http://dx.doi.org/10.1515/JPEM.2000.13.S1.795

6 Qublan HS, Amarin Z, Tahat YA, Smadi AZ, Kilani M. Ovarian cyst formation following GnRH agonist administration in IVF cycles: incidence and impact. *Hum Reprod*. 2006; **21**(3):640-4. http://dx.doi.org/10.1093/humrep/dei371