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Research Article

PRIMARY AMENORRHOEA: OUR EXPERIENCE FROM A TERTIARY CARE CENTRE

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A R T I C L E I N F O

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A B S T R A C T

Objective: To evaluate and manage cases of primary Amenorrhoea attending Govt.gen hospital. Kurnool
Materials and Methods: The study was performed on 30 patients attending endocrinology OPD and referred from gynaecology OPD with complaint of delayed menarche over a period of 1 yr.
Results: In our study 20% Turners cases, 16.7% Mullerian agenesis cases and imperforate hymen in 13.3 % cases was seen.
Conclusions: Management of primary amenorrhoea is multi factorial. Early diagnosis and effective treatment helps in a better outcome.

INTRODUCTION

In women during reproductive life, menstrual periodicity is a reflection of mental and physical well-being. Normal menstrual cycles require proper signals between hypothalamus, pituitary and ovaries. Amenorrhoea is one of the major concerns encountered by women. Primary amenorrhoea is defined as absence of menses by 14 yrs of age when there is no visible secondary sexual characteristic development, or by 16 yrs of age in the presence of normal secondary sexual characteristics.[1] The World Health Organisation has estimated amenorrhoea to be present in 2-5 % of women of child bearing age.[2]About 2 to 5% of adolescent girls present with primary amenorrhea.[3] There are studies from various regions of the world on etiology of primary amenorrhoea. The two main causes are Mullerian anomalies and gonadal dysgenesis with different frequencies in different parts. Some have shown anatomic abnormalities as the most common cause while others have reported gonadal failure as the most common one.

MATERIALS AND METHODS

Present study was conducted in 30 patients of primary amenorrhoea who attended endocrinology OPD (Outpatient department) and referred from gynaecology OPD during June 2016 to July 2017.

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Detailed history of patients was taken. Patients were asked about delayed milestones and pubertal progression, their eating and exercise patterns, changes in weight, medication use, and presence of clitoromegaly, any systemic illness, history of tuberculosis. Family history of primary or secondary amenorrhoea, mental retardation, any other significant illness was also elicited.

Physical examination included examination of height, weight, BMI (body mass index), thyroid palpation, acanthosis and features of insulin resistance, Tanner staging of breast and pubic hairs, axillary hair and local examination of external genitalia. Examined for Bilateral swelling in inguinal region, Rectal and pelvic examinations were done to assess anatomic or Mullerian anomalies. Turner stigmata features were recorded.

The diagnostic workup included ultrasonography and MRI of pelvis, karyotyping, and hormonal assays for FSH, LH, TSH, prolactin and testosterone. Complete blood picture, renal function tests, Echocardiogram, X-Ray left hand for bone age and skeletal X-Rays depending on necessity.

RESULTS

30 cases of primary amenorrhoea were evaluated during 1-year period in patients attending endocrinology OPD and referred from gynaecology OPD in govt general hospital, Kurnool. The common causes of primary amenorrhea were gonadal dysgenesis (20.0%, 6/30), the Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome (16.6%, 5/30), constitutional delay (13.3%, 4/30), and androgen insensitivity syndrome (13.3%, 3/30).

Case	Number	Percentage
Turners	6	20%
Mullerian agenesis	5	16.6%
Delayed puberty	4	13.3%
Imperforate hymen	4	13.3%
Hypogonadotropic hypogonadism	3	10%
Androgen insensitivity syndrome	3	10%
Premature ovarian failure	3	10%
PCOD	2	6.7%

DISCUSSION

The treatment of amenorrhea requires determining its cause first, so a thorough history and physical examination, accompanied by imaging studies and measurements of hormone levels are important to narrow the differential diagnoses. After detailed history and thorough physical examination, initial investigation performed is ultra sound abdomen. For those with absence of uterus, karyotyping and serum testosterone were done to differentiate Mullerian agenesis and androgen insensitivity syndrome. In patients with normal Mullerian structures and no evidence of outflow tract abnormalities, Serum FSH was done. If, serum FSH>40 miu\ml, karyotyping was performed to differentiate Primary ovarian failure and Turners syndrome. If Low or normal FSH, then hypogonadotropic hypogonadism was diagnosed.+

In our study 6 cases of Turners were diagnosed and evaluated for renal and cardiac anomalies. Karyotyping was 45XO in 5 cases, one was mosaic turner with karyotype 45X/46 XY. In mosaic Turner, gonadectomy was done and growth hormone was initiated. Two cases of Turners were associated with hypothyroidism and they were started on thyroid replacement. All the cases are on regular follow up+ and planned for growth hormone initiation.

In 5 cases Mullerian agenesis is diagnosed, absent uterus and absence of upper third of vagina, no associated renal anomalies. In 1 case associated skeletal anomalies with short neck, absent 2nd toe and pre axial poly dactyly. Neo vagina creation is planned 1year before marriage.

In androgen insensitivity case, gonadectomy was done. On HPE (histopathological examination) testicular tissue is confirmed, low dose ethinyl estradiol was started, vaginal dilatation was done as there is no need for neo vagina. She is reared as female only counselled about marriage.

In delayed puberty with normal karyotyping and normal FSH and LH, were followed up as there was a family history of delayed menarche in mother, nutritional status improved and they attained menarche at the age of 17 yrs. Literature shows greater prevalence of gonadal dysfunction leading to primary amenorrhoea in western countries, while that of outflow tract anomalies in Asian- African countries. Most of the studies from United States have mentioned gonadal dysgenesis as the most common cause of amenorrhoea, while a large study from Thailand of 295 cases has shown Mullerian anomaly as the commonest cause in Thai population [4,5,,67]. In our study, we also found Mullerian anomalies as the most common attributing factor to primary amenorrhoea followed by gonadal dysgenesis and hypogonadotropic hypogonadism. A large study from Andhra Pradesh in India had earlier reported abnormal karyotype of 21.5% women presenting with primary amenorrhoea[10]. Our findings were similar to previous study of 48 cases of primary amenorrhoea reported in 1998 from same centre in India where they have found Mullerian anomalies in 54.2% cases followed by hypogonadotropic hypogonadism (22.9%), hypergonadotropic hypogonadism (16.6%) and genital tuberculosis (6.3%)[9]. Eren E *et al*. reported a study elaborating various causes of primary amenorrhoea in 39 cases.[13] A previous study from Turkey had shown high incidence of chromosomal abnormalities in one-fourth cases (25%) of primary amenorrhoea or premature ovarian failure .[12]

The findings of the present study are quite consistent with Reindollar *et al*. [12], which showed that the most common cause of amenorrhea in the American population was gonadal dysgenesis (48.5%).Furthermore, the recent study by Klein and Poth [8] reported that primary amenorrhea is the result of primary ovarian insufficiency (e.g., Turner syndrome) or anatomic abnormalities (e.g., Mullerian agenesis). However, Tanmahasamut *et al*. [4] noted that Mullerian agenesis was the most prevalent cause in primary amenorrhea in Thailand. They reported that the three most common causes of primary amenorrhea were Mullerian agenesis (39.7%), gonadal dysgenesis (35.3%), and hypogonadotropic hypogonadism (9.2%). There was some limitation in that this study was conducted in a single tertiary care hospital, which would have been affected by a referral pattern, but it is the largest case series of primary amenorrhea published yet in Asia.

CONCLUSIONS

Being a major concern in pubertal girls, primary amenorrhea affects physical, mental, psychological and social life of the patient. Team approach involving gynaecologist, geneticist, psychologist and paediatrician should be followed for individualising the management and counselling. Treatment and prognosis in terms of future fertility depends on the primary etiology of amenorrhoea.

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