Adolescent gynaecology

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Abstract

Adolescent gynaecology is increasingly recognized as an area in which specific knowledge and expertise is required to ensure that patients achieve the best outcome. Gynaecological problems in adolescents are common, and although serious pathology is rare, distress and discomfort can be significant. Adolescent girls are under greater pressure than ever before, particularly in terms of examination performance; they find menstrual dysfunction particularly difficult to manage.

Careful and sympathetic assessment is crucial, and simple treatment remedies may be all that is required. However, complex and rare medical conditions can also occur and must not be missed. Some congenital disorders present for the first time in adolescence.

Early detection and appropriate treatment will ensure the best possible outcomes in terms of sexual function and potential fertility.

Keywords adolescent gynaecology; menstrual dysfunction; polycystic ovary syndrome; Rokitansky syndrome; Turner syndrome

Introduction

Gynaecological problems are relatively common among adolescents. In most cases, the condition will improve with time and simple remedies along with reassurance are all that is required. Nevertheless, serious pathology does occur and specialist expertise is required to ensure the best sexual and reproductive outcome for these adolescents.

Improved neonatal and paediatric care and surgery means that children who may not have previously survived into adult life now do so. Adolescents with cloacal anomalies, childhood cancer survivors, girls with metabolic and genetic diseases have the same sexual and reproductive expectations as their peers and deserve optimum gynaecological input to achieve these goals. This review focuses on common and uncommon gynaecological problems in adolescents.

Menstrual dysfunction

Menstrual disorders in adolescent girls are common, but the exact incidence is unknown because teenagers do not present due to embarrassment as well as lack of knowledge about what is 'normal'. Presentation with a menstrual disorder may disguise other worries such as contraception, bullying and abuse, sexually transmitted infection or possible pregnancy. Vaginal examination in this group should only be done in consenting adolescents who are sexually active and only when it is likely to add value to the assessment.

Menorrhagia

It is common for adolescents to have irregular cycles for the first 2–3 years after menarche. This is due to the relative immaturity of the hypothalamic–pituitary–ovarian axis and the fact that cycles are mostly anovulatory. Periods occur randomly and can be heavy and prolonged. Ultrasound is usually non informative and usually reveals a uniformly thickened endometrium and multifollicular ovaries.

A small number of girls require hospital admission with severe and profuse bleeding causing cardiovascular compromise and severe anaemia. Acquired and congenital bleeding disorders are relatively common causes of menorrhagia and may occur in 10–15% of cases. Conditions such as von Willebrand disease and immune thrombocytopenic purpura should be excluded in any girl with severe menorrhagia refractory to simple treatments.

Treatment

Approximately one in 10 adolescent girls, requires some form of treatment for heavy periods. Treatment principles are as for the older woman.

Anti-fibrinolytic drugs such as tranexamic acid are well tolerated and effective in reducing blood loss and can be used in combination with a *non-steroidal anti-inflammatory drug (NSAID)*, such as mefenamic acid. NSAIDs have the added benefit of reducing dysmenorrhoea, as well as menstrually related headaches, however gastrointestinal side-effects may limit compliance.

Cyclical progesterone is the most widely used regime, although its efficacy is poorly established. In order to be effective, progesterone does need to be given for a full 21 days each month rather than just during the luteal phase as has traditionally been prescribed. The administration of luteal phase progesterone will make the cycle regular but can make periods heavier. Norethisterone is the most potent of progestogens and as such provides the best cycle control. However, it is also the most androgenic and side-effects such as acne and hirsutism may deter continuing treatment. A combination of cyclical progesterone and a prostaglandin synthetase inhibitor such as mefenamic acid is frequently recommended and seems to be effective.

The combined oral contraceptive (COC) pill is often first line treatment. It has been demonstrated objectively to reduce blood loss and is safe if used within current guidelines in girls in whom there are no contraindicating factors. Sometimes there may be maternal resistance, due to fears over sexual activity. However, there is no evidence that recommending the combined oral contraceptive for menstrual dysfunction brings forward the sexual debut. There is also no evidence that the combined oral contraceptive interferes with sexual development or affects final height and can therefore be safely prescribed in a menstruating adolescent.

In some adolescents, oestrogen-containing preparations are contraindicated. This may be due to an underlying medical problem, for example systemic lupus erythematosus or a personal or close family history of venous thromboembolism. In this situation, progesterone-containing treatments such as Depo-Provera or the Mirena IUS can be considered. Both are effective in relieving heavy periods, and both offer good contraception

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(although no protection against sexual transmitted infections). They also have the advantage of leading to amenorrhoea in a proportion of girls, which can be a very practical advantage in young adolescents.

However, there are some limitations to their use. The Depo-Provera has been linked with a reduction of bone mineral density (BMD) when used for a prolonged period of time, and although there is no evidence of an increase in bone fractures rates, the current advice is that its use should be re-evaluated every 2 years. Also, there should be careful consideration when prescribing the Depo-Provera in girls with other risk factors for osteoporosis, such as use of steroids or prolonged immobility.

There is increasing experience over the use of the Mirena IUS in adolescence. Insertion is usually performed under general anaesthetic. The uterine cavity should be at least 5 cm in length to accommodate the IUS and therefore uterine size should be assessed by ultrasound preoperatively. The Mirena is especially useful among girls with thrombophilias that will need long-term management of their periods. It also has a valuable role in the treatment of girls with physical and/or mental disabilities who may find managing heavy periods difficult and distressing.

Short-term outcomes with the treatments listed above seem to be good. There are no recent studies of prognosis; however, older studies have demonstrated a poor outlook with persistent problems noted into adulthood in up to one-third of patients. It is possible that improved medication has also improved long-term outcomes.

Acute menorrhagia

Acute and heavy vaginal bleeding can occasionally occur with menstruation and require hospitalization.

Blood loss can be significant and can cause severe anaemia and haemodynamic instability. Admission, resuscitation and blood transfusion may be required. The administration of high-dose oral progesterone (for example norethisterone 10 mg three times a day) should stop the bleeding in most cases. Alternatively, large doses of combined oestrogen and progesterone can be used, in the form of 3 or 4 COC pills per day until bleeding stops. However this regime is not well tolerated due to severe nausea and vomiting and carries a potential risk for thromboembolism. The same applies to high-dose intravenous oestrogen, often advocated as first line treatment in the USA but not usually available in the UK.

Haematological assessment is essential, and the innovative use of recombinant clotting factors such as recombinant factor VIIa has been reported. Desmopressin acetate (DDAVP) can be beneficial in cases of Von Willebrand disease, as it increases levels of vW factor and factor VIII. In cases of unremitting blood loss, examination under anaesthetic and hysteroscopy may reveal an anatomical anomaly such as a haemangioma or other arteriovenous anomaly, that can then be treated with embolization.

Dysmenorrhoea

Pain during menstruation may have a significant impact on schooling and examination performance. Earlier periods may be pain free, and the advent of painful menstruation usually occurs on establishing regular ovulatory cycles. Pain is attributed to higher levels of prostaglandins, and NSAIDs such as mefenamic acid can be very helpful. The suppression of ovulation with the combined oral contraceptive pill is also very effective in making the periods lighter and less painful.

Most girls respond to these treatments and those who fail to do so, need further evaluation. Dysmenorrhoea can be caused by uterovaginal anomalies that lead to obstruction of menstrual flow. The commonest obstructive anomalies are a hemiuterus, associated with a rudimentary cavity and a complete bicorporeal uterus accompanied by a vaginal septum that leads to obstruction of a hemivagina. In both cases menstrual blood flows from the unobstructed side, while blood accumulates on the contralateral side leading to worsening pain each month. The anatomy may be complex, and a pelvic magnetic resonance imaging scan is required before planning surgical treatment. Excision of the rudimentary cavity can usually be accomplished laparoscopically.

It is also increasingly realized that endometriosis is not a disease restricted to adult women. Endometriosis is the most common cause of secondary dysmenorrhoea and may affect as many as 73% of adolescents with chronic pelvic pain unresponsive to usual treatment. If pelvic pain is refractory to non-steroidal anti-inflammatory drugs and the oral contraceptive pill, a diagnostic laparoscopy is indicated. Treatment options are currently as for adult women, with a combination of surgical and drug treatment. Psychological support and contact with similarly affected adolescents is though to be of benefit.

Sexually transmitted diseases and pregnancy related problems

The age of coitarche is steadily decreasing with approximately one fourth of the under 16 year olds in the UK being sexually active. Younger people are less likely to be using barrier contraception, which makes them more vulnerable to sexually transmitted diseases and unwanted pregnancies. It is therefore important that a sexual history is taken when a teenager presents with abdominal pain or irregular vaginal bleeding. Where indicated a pregnancy test should be done.

Ectopic pregnancy rates are on the rise, whereas mortality rates have remained unchanged over the past decade. The confidential enquiry into maternal deaths, has repeatedly stressed that ectopic pregnancy can have subtle or atypical manifestations, that can be misinterpreted for gastrointestinal or urinary tract dysfunction, leading to unnecessary delay in diagnosis and treatment.

Chlamydia carriage is high among teenagers and young adults, reaching up to 6% in some populations. Infection in the female patient is often subclinical. At other times, it may present with mild non-specific symptoms such as intermenstrual bleeding or overt pelvic inflammatory disease with abdominal pain, purulent vaginal discharge and fever. Treatment should be instituted straight away with broad spectrum antibiotics, in order to prevent the long-term sequelae of adhesion formation, chronic pelvic pain and infertility.

Disorders of puberty

Normal pubertal development is centrally driven and depends upon normal functioning of the hypothalamic–pituitary–gonadal axis and appropriate gonadotrophin and growth hormone secretion.

Many factors influence the timing of the onset of puberty, including general health, genetic influences, nutrition and exercise. Racial differences also occur, with girls of African origin having an