CASE REPORT

Multiple uterine fibroids in an 18-year-old: a case report and review of literature

Opeyemi R Akinajo, Aloy Okechukwu Ugwu, Francis Chinonso Ezenwankwo and Adaiah P. Soibi-Harry

Department of Obstetrics and Gynaecology, Lagos University Teaching Hospital. Idi-Araba, Lagos, Nigeria

Correspondence:
Opeyemi R Akinajo
opeyemiakinajo@gmail.com

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Abstract

Uterine fibroids are benign monoclonal neoplasms arising from smooth muscle cells in the uterine wall. They are common gynaecological tumours in women of reproductive age, but, a rare occurrence in adolescence.

We present a case of a Nigerian 18-year-old undergraduate with abnormal uterine bleeding and abdominal swelling with a clinical diagnosis of uterine fibroids. She had an open abdominal myomectomy. Histology confirmed uterine fibroids. There is need for medical practitioners to consider this condition as a differential diagnosis especially among this group of women albeit a rare occurrence.

Keywords: uterine fibroid, gynaecological tumours, reproductive age, myomectomy, Nigeria

Introduction

Uterine fibroids are the commonest benign gynaecological tumour arising from the smooth muscle cells.[1,2] They are usually firm, well demarcated whorled tumours and have been found to occur in 70-80% of women before or by the onset of menopause.[2,3] The prevalence increases with age, and although it has been reported rarely in adolescents, the exact aetiology of a leiomyoma is not clearly understood. A number of risk factors have been implicated.[4] In adolescents, it is hypothesised that ovarian activation, genetic characteristics, prenatal hormone exposure, growth factors could predispose to the development of leiomyomata.[2,3,5]

The presentation and clinical features of uterine fibroids depends on the size and location.[5] Among the women diagnosed with leiomyoma the majority will be asymptomatic and will not require treatment.[1,2,5] However, in symptomatic cases, abnormal uterine bleeding is the most frequent complaint, the commonest of which is heavy menstrual bleeding.[5,6] Other symptoms include; abdominal pain, dysmenorrhoea, pressure effect, spontaneous miscarriage and infertility. [1,6]

Case Report

An 18-year-old nulliparous undergraduate presented to our outpatient department with a history of heavy menstrual bleeding with passage of clots for one-year and a progressively increasing lower abdominal swelling of eight months' duration. She used an average of six sanitary pads per day as against her usual three. The duration of her menstrual flow increased from three days to eight days with associated dysmenorrhoea severe enough to disturb her daily activities and sleep. There was no history of bleeding from other parts of her body, no easy bruising, and no history of intermenstrual bleeding. There were occasional episodes of palpitation and dizziness, but no syncopal attacks. There was no personal or family history of breast, ovarian, endometrial, or colon cancer. Her grandmother, mother, and two older sisters had a history of uterine fibroids. She had no chronic medical condition and attained menarche at ten years of age with a moderate flow for five days in a regular 28-day menstrual cycle, before the onset of present symptoms. She was *virgo intacta*.

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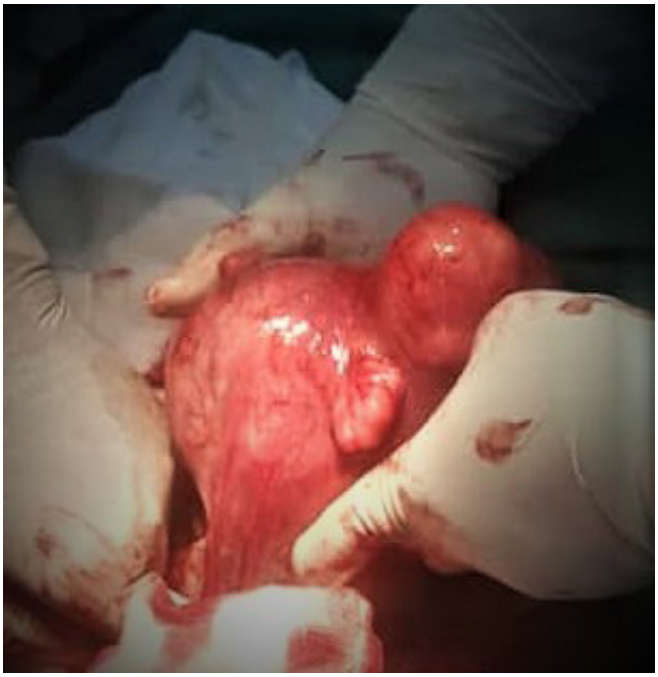

Figure 1. Fibroid riddled uterus (Credit: Dr Ugwu).

Her general physical examination was normal apart from a degree of pallor. No abnormality was detected in the respiratory and the cardiovascular systems. Abdominal examination revealed no hepatomegaly, splenomegaly or palpable kidneys. A 20 weeks' sized pelvic mass was noted. It was smooth, firm, regular and mobile. There was no ascites and bowel sounds were normal. Vaginal examination showed an intact hymen. A diagnosis of symptomatic uterine fibroids was made with the differential diagnosis of an ovarian tumour.

Full blood count showed a packed cell volume (PCV) of 26% and haemoglobin of 8.6g/dl. Her serum electrolyte, urea and creatinine, urine beta HCG and alpha- fetoprotein levels were within normal limits. Pelvic ultrasonography revealed an anteverted and markedly enlarged uterus with multiple well defined, hypoechoic solid masses of varying sizes, the largest measured 13.4cm x 8.5cm located in the fundus. Subserous and submucous components were also seen. Magnetic resonance imaging (MRI) of the pelvis could not be done due to financial constraints.

She was subsequently counselled on different options of management in the presence of her parents and they opted for an open abdominal myomectomy. They were further counselled on the benefits as well as the associated risks, recurrence and future fertility. Informed consent was obtained. Intraoperative findings (Figure 1) were that of a 20-week sized fibroid riddled uterus with multiple sub-serous, intramural and submucous fibroids. Thirteen fibroid nodules were enucleated with the smallest size measuring 2cm and the largest 16cm. The fallopian tubes and ovaries were healthy. Estimated blood loss was 600mls.

Her immediate post-operative period was uneventful and her vital signs remained clinically stable. Her postoperative PCV was 28.6% while her haemoglobin was 9.5g/dl. Her postoperative recovery was satisfactory and she was discharged home on the 4th postoperative day on iron, folic acid and vitamin B supplements. At her first follow-up visit two weeks later she was asymptomatic and the surgical site was well healed.

At four weeks she had a PCV 30% and haemoglobin of 10g/dl. The histology report confirmed uterine fibroids. Though she was adolescent and not sexually active, she was still counselled on contraceptive options.

Discussion

Uterine fibroids are benign monoclonal tumours of smooth muscle cells of the myometrium composed of large amounts of extracellular matrix containing collagen, fibronectin, and proteoglycan.[7,8] They account for 3.2–7.6% of new gynaecological cases seen in gynaecology clinics.[9] Fibroids have been reported in up to 70% of uteri at hysterectomy.[7] They are uncommon in the adolescent age group.[7,8] The exact aetiology of uterine fibroids has not been fully elucidated. However, cytogenetic and genetic studies suggest that they result from somatic mutations in myometrial cells with aberrations involving chromosomes 6,7,12 and 14. [7,8] These chromosomal aberrations are not present in all the fibroids in a single uterus suggesting that there may be other explanations in the pathogenesis.[7]

Each fibroid is believed to be monoclonal in origin and arises from a single muscle cell.[8] It has been established that the growth of these fibroids is closely dependent on ovarian steroids.[7,8] Abnormalities in uterine vasculature and angiogenic factors have also been implicated as fibroids have a rich blood supply.[7] Known risk factors for uterine fibroids includes: black race, nulliparity, obesity, familial predisposition, polycystic ovary syndrome, diabetes and hypertension.[8,10] The risk factors identifiable in this patient include being of the black race, positive first-degree relative family history of uterine fibroids, nulliparity and being of reproductive age. High consumption of red meat (beef), as a source of extra oestrogen, has been noted to increase the likelihood of developing uterine fibroids by 1.7 fold.[10,11]

Fibroids can be classified by their anatomical location in the uterus: intramural, sub-serous, sub-mucous, cervical, intra-ligamentary, pedunculated or parasitic in which case the leiomyoma has acquired an extrauterine blood supply usually from the omentum with atrophy and resorption of its pedicles.[7,8] The International Federation of Gynaecology and Obstetrics (FIGO) classification can also be used to classify them.[12,13]

The clinical features of uterine fibroids depends on the size and location.[8] Although they maybe asymptomatic in up to 70% of cases heavy menstrual bleeding is the commonest symptom[8] as in our patient. The possible mechanisms by which fibroids may cause menorrhagia include: enlargement of the surface area of the uterine cavity, congestion and dilatation of endometrial venous plexuses, imbalance in uterine prostaglandin production and disturbances in normal myometrial contractility.[8] Patients may also present with chronic pelvic pain, dysmenorrhoea, dyspareunia, pelvic pressure, urinary symptoms and rarely venous thrombosis and constipation or intestinal obstruction from recto-sigmoid compression.[7,8,10]

Diagnosis of uterine fibroids can be made following a good history and physical examination. Ultrasound scans (especially transvaginal) remain invaluable first-line imaging modalities.[7,8] This patient however had a trans-abdominal pelvic ultrasound done because she was *virgo intacta.*

Management can be conservative, medical, or surgical. Asymptomatic patients are managed conservatively. This involves explanation, reassurance, and re-examination at periodic intervals.[8] In symptomatic cases, with menorrhagia, anaemia if found should be corrected. Tranexamic acid, combined oral contraceptives or levonogestrel releasing intrauterine device can be used to reduce menorrhagia.[7,8] Gonadotropin-releasing hormone (GnRH) analogues cause temporary regression of fibroids by decreasing estrogen levels.[7,8] GnRH analogues are typically used for a maximum of six months due to their side effects such as vasomotor symtoms, osteoporosis and other common postmenopausal symptoms.[7,8] These side effects especially vasomotor symptoms can become so severe to require add-back therapy with primarin or combined oral contraceptives.[7,8] Hence the main use of GnRH is to reduce the size of fibroid preoperatively in order to minimize intraoperative blood loss.[8]

The selective progesterone receptor modulator ulipristal acetate has shown remarkable results in effectively reducing pain, bleeding and fibroid size without producing oestrogen deficiency symptoms like hot flushes.[7,8]However, prolonged use of this drug is discouraged as fulminant hepatic failure has been noted in some patients after prolonged use.[7] Surgical methods of management include myomectomy, hysterectomy, myolysis, uterine artery embolization and bilateral uterine artery ligation.[7,8,14,15]

Myomectomy can be via open abdominal surgery or endoscopic surgery (laparoscopy, hysteroscopy).[7,8] The surgical method of choice depends on the age of the patient, the size of the fibroid, the severity of symptoms, the desire for fertility, and the skill of the surgeon.[8,14]

Surgical options of management such as hysterectomy, uterine artery embolization and ablation procedures are reserved for women who have completed their family sizes.

This patient would have benefitted from a laparoscopic myomectomy based on the fact that it is a minimally invasive procedure with little or no risk of adhesions that might complicate future fertility. However, she had an open abdominal myomectomy because her fibroids were relatively large and she was virgo intacta. There is a risk of recurrence following myomectomy hence hysterectomy is considered the definitive treatment for uterine fibroids.[7]

Management of symptomatic uterine fibroids in an adolescent can be difficult as the clinician is faced with the major challenge of preserving the fertility of the patient, the plausible risk of recurrence and the attendant complications of surgery which include adhesion formation and increased need for Caesarean delivery in the future. Irrespective of the above, myomectomy still remains the preferred management option in this group of young patients.

Conclusion

This was a case of an adolescent with multiple uterine fibroids. Uterine fibroids should be in the differential diagnosis list when evaluating adolescent women who present with a pelvic mass, abnormal uterine bleeding and abdominal pain. This group of women should be adequately counselled on the different options for management with the ultimate goal of preserving their future reproductive career.

Conflict of interest: None declared.

Consent for publication: A written informed consent was obtained from the patient before publication of this case report and accompanying image.

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