

Uterine Leiomyoma in Ile-Ife, Nigeria.

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Abstract

Context: Uterine leiomyoma is the commonest tumour of the female pelvic organs, with a 3-fold preponderance among blacks compared to Caucasians.

Objective: To document common morbidities associated with this commonest female pelvic tumour and proffer ways of reducing it.

Study Design, Setting and Subjects: A descriptive study of all cases of uterine leiomyoma admitted into the Gynaecological Ward of the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, between January 1 1996 to December 31 2000.

Main Outcome Measures: Relative proportion of cases admitted on account of uterine leiomyoma compared to total number of gynaecological admissions during the review period. Definitive treatment employed to reduce morbidity, treatment outcome and complications.

Results: Uterine leiomyoma was responsible for 6.58% of total gynaecological admissions. 69.4% of patients were in their 3rd and 4th decades. 41% of these patients were nulliparous. Majority (62.5%) of them had abdominal mass of about 12-20 week gravid uterine size. The common modes of presentation were menstrual abnormalities, lower abdominal swelling, lower abdominal pain and infertility. Treatment was essentially surgical (hysterectomy 46.6% or myomectomy 40.9%) Nearly 20% of those who had myomectomy subsequently carried pregnancies to age of viability.

Conclusion: Uterine leiomyomas tend to grow to unsightly sizes in our environment. Routine ultrasound scanning at age 20, followed by 2-5yearly scan will help in early detection and subsequent follow-up.

Key words: Uterine leiomyoma; Myomectomy; Hysterectomy; Infertility, Laparoscopic surgery.

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Introduction

Uterine leiomyomas or commonly called fibroids are benign tumors of uterine myometrium composing smooth muscles with variable amounts of connective tissue. It is the commonest tumour of the female pelvic organs¹. Only 20% will present clinically. However, a prevalence of 77% has been suggested going by pathological surgical specimens.² The aetiology is unknown. Current evidence supports chromosomal aberration in which translocation involving chromosome 12 and 14 leads to cytogenetic abnormalities in myocytes with associated expression of growth stimulatory factors and reduced expression of growth inhibitory factors³. The myomatous cells however need ovarian hormone milieu to grow hence its preponderance in the reproductive age group^{1, 3}. The blacks are highly predisposed as it is three fold commoner in them than in the caucasians⁴. Smoking, oral contraceptive use, consumption of green vegetables are protective whereas obesity and consumption of red meat increase the risk^{5,6}.

It varies in size and site in the uterus. Usually symptomless but when symptomatic it presents with abnormal uterine bleeding, abdominal mass, abdominal discomfort, pressure symptoms and infertility. It could

be managed expectantly, medically and surgically. There is increasing place being found for gonadotrophinreleasing hormone analogues in developed world while conservative surgical techniques like laparoscopic myomectomies, uterine artery embolization are being introduced^{1,7}. The picture is different in developing world, as mainstay of management is majorly hysterectomy or myomectomy. This descriptive study looked at the demographic factors, presentation and mode of management of these patients. Ways of reducing morbidity are suggested

Materials and Methods

All cases of uterine fibroids over a five-year period from January 1996 to December 2000 admitted into gynaecological ward of OAUTHC, Ile Ife were retrieved from medical Records Department. During this period there were 1565 gynaecological admissions among which 103 cases were clinically and histologically diagnosed uterine fibroids. The case notes of 88 of these patients had complete information for

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TABLE 2: Levels of acute phase proteins (mean±1sd) in pregnant women with or without recurrent abortion compared with controls

Subjects	n	Transferrin (mg/dl)	Alpha-2-Macroglobulin (mg/dl)
C	24	110.3±9.0	705.5±34.9
P-R	36	100.7±25.7	609.1±27.2
P+R	24	66.8±17.1	1301.8±16.6
F, p-values		11.80,0.003	9.01,0.009

Keys:

P-R = Pregnant subjects without recurrent abortion

P+R = Pregnant subjects with recurrent abortion

♦ = Significant difference between controls and P-R

♥ = Significant difference between P-R compared with P+R

* = Significant difference between controls and P+R

Discussion

Serum IgA level was lower in pregnant women without recurrent abortion compared with controls. Serum values of IgA in pregnancy are conflicting. Some investigators have reported a non-significant change in IgA during pregnancy¹⁰ while others reported low values¹¹. The role of haemodilution during pregnancy cannot be ruled out in explaining the cause of its low level. Similarly, serum IgA levels were lower in pregnant women with recurrent abortion as compared to the control group. Report on serum IgM in pregnancy are at variance. Some studies have reported low levels of IgM in pregnant women¹⁰. The elevated level of IgM as found in pregnant subjects without recurrent abortion in the present study has been similarly observed by other workers¹². However, the physiological changes in the genitourinary system of pregnant women increased their susceptibility to urinary tract infection¹³, which the body responds to by producing IgM along with IgA isotypes.

The mean serum level of IgM in pregnant subjects with recurrent abortion was found to be higher than in controls but lower than the pregnant women without recurrent pregnancy loss. The observation in this study was in concordance with some investigators. Lockwood et al¹⁴ earlier established that an increased serum IgM in subjects with recurrent abortion. The reason for the differences in the level of serum IgM in subjects with recurrent abortion and pregnant subjects without recurrent abortion remain unpredicted, however, it was suggested that increase in serum IgM of women with recurrent abortion could be due to the non-specific binding of IgM which suggests polyclonal IgM elevations¹⁴. Unander et al¹⁵ also established that increase in the IgM serum levels in patients with recurrent abortion might be due to infections.

In pregnancy, several studies have reported a low serum IgG level^{10, 11}. This observation could be related to haemodilution during pregnancy. However, a significantly high serum IgG was observed in this study may be caused by trans-placental transfer of IgG to developing foetus that induces more synthesis. Also, susceptibility of pregnant women to infections especially malaria which is endemic in the tropics¹⁶ may account for the production of the excessive IgG. Immunisation against some communicable diseases that are routinely given to expectant mothers could also stimulate more IgG production, being the predominant antibody synthesized in the secondary immune response.

The significantly high serum IgG observed in pregnant subjects with recurrent abortion may be due to its protective role both to the offspring and the mother. Although, it had been established by Kalra et al¹⁷ in their investigations that there was an increase in the serum IgG levels in women with recurrent abortions which had been attributed to first trimester recurrent abortions.

Reduced level of alpha 2 macroglobulin was found in P-R subjects. Previous reports have associated high values of alpha 2 macroglobulin with low birth weight^{18, 19}. Thus, the significantly low serum level of alpha 2 macroglobulin recorded in pregnant subjects without recurrent abortion may be of immense benefit to the outcome of the pregnancy. Alpha-2 macroglobulin is a large plasma glycoprotein that binds many proteinases. Proteolytic enzymes released from damaged tissues as well as from phagocytic cells have their activity inhibited by being bound to alpha-2 macroglobulin²⁰. In addition, alpha 2 macroglobulin is also known to bind growth factors such as IL-8, nerve growth factor, platelet derived growth factor B and transforming growth factor-B²¹ and transport them to their target cells where such cytokines affect cell growth and functions²².

Raised level of alpha-2 macroglobulin was observed in P+R. The possible increase in hepatic synthesis of alpha 2 macroglobulin to meet the requirement caused by tissue damage and as transport protein may account for the significantly high level of alpha 2 macroglobulin found in pregnant subjects with recurrent abortion in this study. This high level has been similarly documented in animal model (Shimizu et al, 2002).

Transferrin is the principal plasma protein for transport of iron. In states of iron deficiency, plasma transferrin level rises and returns to normal level upon successful treatment with iron²³. Transferrin is a negative acute phase protein, and as such, its level is expected to reduce during inflammation, chronic liver disease, malnutrition, or protein loss, as in protein losing enteropathies²³. In view of the iron deficiency that is expected in pregnancy²⁴, antenatal routine iron supplement given to pregnant women affects

transferring level²³. High transferrin level observed in pregnant women without recurrent abortion could indicate a normal functioning of hepatic parenchymal cells that produces more transferrin to bind from the circulation excess iron. In the present study, serum transferrin was significantly low in P+R compared to controls. In cases of abortion, blood loss and RBC haemolysis is common¹. Overproduction of iron from periodic RBC lysis might have caused consumption of transferrin, thus reduced level in P+R subjects.

Collective consideration of all results of this study shows a similar pattern of immunoglobulins and acute phase proteins except (alpha 2-macroglobulin) in P-R and P+R compared with the controls, that is reduced mean levels of IgA, IgG, IgM and transferrin in both P-R and P+R compared with the controls. Only alpha 2-macroglobulin was raised in P+R but was reduced in P-R. Based on this, the involvement of alpha 2-macroglobulin in recurrent abortion requires further investigation.

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