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Original Research Article

## A prospective study on association of primary infertility and fibroid uterus

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### ABSTRACT

**Background:** Implication of fibroid uterus on infertility is still debateable. Co-existence of infertility and fibroid uterus has been observed many times in clinical practice. This study is conducted to ascertain the frequency of primary infertility in women suffering from fibroid.

**Methods:** A prospective observational study was conducted at AL Qassmi Women's and Children's Hospital, Sharjah - UAE over a period of six months from January 2018 to June 2018. Total 100 patients were participated in the study. All data were collected and analysed using SPSS ver 20 software.

**Results:** During the study period, a total of one hundred women presented with fibroid uterus were observed. All the cases were within the reproductive age group ranging from 20-43 years of age. 40% for cases were between 20-27 years, 49% cases were between 28-35 years and 11% belonged to 36-43 years of age. Considering the symptoms, infertility was 14%. According to the number of fibroids, in 22% of cases, there were multiple fibroids. The single uterine fibroid was seen in 78% of cases.

**Conclusions:** Fibroid is relatively common in patients of reproductive age and was associated with infertility in 14% of cases.

**Keywords:** Fibroid uterus, Primary infertility, Leiomyoma uterus

### INTRODUCTION

Leiomyomas are benign tumours of smooth muscles occurring mainly in the uterus. Uterine cavity leiomyomas are indeed the most common pathological growth in the female genital tract affecting about 40% of the female population.<sup>1</sup> Leiomyomas may remain symptomless in a small group of patients, but majority of affected people generally presents with morbid symptoms.<sup>2</sup> The common symptom with which patients with fibroid uterus come to the OPD (outpatient department) is menorrhagia but a significant number of patients suffer from primary infertility too.<sup>3</sup> Among the general effects, sign and symptoms of anaemia are probably the most common apart

from weakness, breathlessness or both. Leiomyoma's may present with pressure symptoms such as the sensation of weight in the pelvis, oedema and varicosities of legs and bladder irritability. Abortion, abnormal placentation, mal presentation, obstructed labours, preterm labour and labour dystocia are the seen in gravid patient with fibroid uterus.

Other factors such as parity, age, social and genetic factors have also been postulated but never established with certainty. Infertility is commonly associated with myomas. The majority of patients are either nulliparous or of low parity. The association between fibroid uterus and primary infertility is intriguing principally because of each support and augments the other in a vicious cycle. Approximately

50% of the women with infertility and myomas become pregnant after myomectomy.<sup>4</sup>

Indeed, leiomyomas represent an increasing medical problem in women attempting to conceive at a more advanced age, when the rate of development of these lesions is also increased. Uterine fibroids have been reported in 27% of infertile women. It has observed in studies that approx. 50% of women with unexplained infertility become pregnant after myomectomy.<sup>3,4</sup> The age at which a first pregnancy occurs, is increasing from the mid-twenties to thirties/forties. This shifted age of first child birth and increased leiomyoma frequency among these age group, are the background to conduct this study. The aim of the present study is to ascertain the frequency of primary infertility in women suffering with fibroid uterus.

## METHODS

It was a prospective observational study conducted at the department of obstetrics and gynaecology, AL Qassmi Women's and Children's Hospital, Sharjah - UAE over a period of six months from January 2018 to June 2018.. The study was approved by institutional ethical committee. Informed written consent was taken from all participant of study population. All patients in this study were included based on a detailed history, clinical examination investigations through the outdoor patient department. Detailed questions including age, parity, chief complaints, history of a medical disorder and surgery were taken. Each patient was examined thoroughly after obtaining complete and detail history. The fibroid was confirmed by ultrasonography. All analysis was done by SPSS version 20 and appropriate statistical tests were used for analysis.

### Inclusion criteria

All women with fibroid uterus (symptomatic/asymptomatic) attending infertility OPD for primary infertility were included in the study.

### Exclusion criteria

Women with fibroid uterus attending infertility OPD for secondary infertility were excluded from the study.

## RESULTS

Total 100 patients were participated in study and fulfilled the inclusion and exclusion criteria. All the women were counselled regarding the aim and objective of the study and informed consent were taken. All the cases were within the age group ranging from 20 years to 43 years of age. 40% were between 20-27 years, 49% were between 28-35 years, and 11% were 36-43 years of age group. The mean age was 33±4.5 years (Table 1).

Considering the symptoms, primary infertility was associated with 14% of cases. Asymptomatic, menstrual

abnormality and lower abdominal pain were noted in 24%, 52% and 6% cases respectively. Different type of pressure symptoms like frequency of micturition, chronic constipation and varicosity was 4% (Table 2). According to the number of leiomyomas, in 22% of cases, there were multiple leiomyomas. Single uterine leiomyoma was seen in 78% of cases (Table 3).

**Table 1: Age distribution of study population.**

Age (years)	Number, (n=100)	Percentage (%)
20-27	40	40
28-35	49	49
36-43	11	11

**Table 2: Presenting symptoms.**

Symptoms	Number, (n=100)	Percentage (%)
Primary infertility	14	14
Menstrual abnormalities	52	52
Pain	6	6
Asymptomatic	24	24
Pressure symptoms (frequency etc.)	4	4

**Table 3: Number of fibroids among study population.**

Numbers of fibroids	Number, (n=100)	Percentage (%)
Solitary	78	78
Multiple	22	22

## DISCUSSION

The exact aetiology of leiomyoma uteri is entirely unknown. It has been seen through that the growth of uterine fibroids is clearly dependent upon ovarian hormones since fibroids rarely occur before puberty and after menopause and an increase in size may actually recede after menopause.<sup>5</sup> A Leiomyoma is relatively common in patients of reproductive age. Approximately 50% of women with infertility and myomas become pregnant after myomectomy. Uterine leiomyoma constitutes a major public health problem to the community in term of outpatient attendance and hospital cost for surgery.<sup>6</sup> The actual cause and effect relationship between fibroids and primary infertility has not been established but it is clear that fibroids or leiomyomas in the uterus interfere with the implantation of the zygote in the uterus.<sup>7</sup>

The relationship of myomas and infertility remains a subject of debate. Leiomyomas are associated with infertility, the causal relationship in this regard appearing to be more evident for submucosal myomas. Myomas may also be associated with implantation failure or gestation

discontinuation due to focal endometrial vascular disturbance, endometrial inflammation, secretion of vasoactive substance or an enhanced endometrial androgen environment.<sup>8</sup>

Leiomyomas of the uterus are the most common solid pelvic tumours in women and are present in 20 to 25% of women aged >35 years.<sup>9</sup> Indeed, Leiomyomas represent an increasing medical problem in women attempting to conceive at a more advanced age, when the rate of development of these lesions is also increased. Uterine fibroids have been reported in 27% of infertile women, and 50% of women with unexplained infertility have seen the presence of leiomyomas.<sup>2</sup>

The mean age of the study population was 33±4.5 years and majority of study population belonged to age group of 28-36 years. Akhter et al in their study reported the mean age of study population was 26.5±5.35 years which was less than the finding of our studies.<sup>10</sup> However, the mean age of study population in our study was relatively higher which was probably due to socioeconomic factor and recent change in trend of becoming first time pregnant in early thirties. In this study frequency of primary infertility in uterine leiomyomas was 14%. Although the aetiology is unknown but certain factors were determined which predispose to uterine leiomyoma; like the family history, chronic pelvic infection and ovarian cyst with anovulatory cycle. The association of primary infertility and uterine fibroid was 5-10% as reported by the study conducted Carranza-Mamane et al.<sup>11</sup> Earlier study by Buttram et al, Verkauf et al reported the association of primary infertility and myomas ranged from 1-2.4%.<sup>8,12</sup> In this study, we have found that 22% cases have multiple fibroids and 78% have a solitary fibroid. The results of my study were comparable to a study carried out by Davis et al.<sup>13</sup>

## CONCLUSION

Leiomyoma is relatively common in patients of reproductive age and was exclusively associated with infertility in 14% of cases. The role of uterine fibroids remains controversial but seems to suggest that the presence of myomas decrease the pregnancy rates. Therefore, further trials with larger patients, samples are needed to verify the relation of fibroids and primary infertility.

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