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Perspective

Endometriosis –A Case Series at a Tertiary Care Center

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Abstract

Primary Outcome: To assess prevalence of endometriosis in Saudi women at a tertiary center and peak age of presentation .

Secondary Outcome: Presenting symptoms, parity and endometriosis, relationship between age and stage of endometriosis, endometrioma, recurrence and pregnancy rate postoperative.

Study Method: 595 case files reviewed, all patients were operated by the same surgeon. 85 patients with endometriosis identified. Data analysis done using SPS version 16. Inclusion criteria - comprised of female patients age group between 15-54 years, histologically proven endometriosis and coincidental finding of endometriosis. Exclusion criteria – patients who received empirical or medical treatment and discrepancy of ultrasound results compared to histopathology. All patients underwent laparoscopy except for one who underwent laparotomy due to extensive adhesions. Endometriosis staged according to American Society of Reproductive Medicine 1996. Ovarian cystectomy performed for patients with endometrioma. Follow up data retrieved for 39 patients [45.9%].

Results: Prevalence of endometriosis 14.3%, pelvic pain was the main presenting symptom in 55.3% [47 patients], infertility 30.6% [26 patients] and other symptoms 14.1% [12 patients]. Peak age of presentation was at 30 - 34 years. 38.8% of patients presented with stage 4 endometriosis. 72% had endometrioma, 26% had bilateral endometrioma, 44% had it on left side, and 30% on the right side. Sensitivity of ultrasound scan for endometrioma was 75% and specificity was 80%. 39 patients were followed up, 15% had recurrence and a pregnancy rate of 38.8%.

Conclusion: Prevalence of endometriosis 14.3% in Saudi women at our center, peak age of presentation 30 - 34 years. Pelvic pain was the main presenting symptom.

Keywords: *Endometriosis; Saudi Women; Laparoscopy*

Introduction

Endometriosis is a benign, inflammatory disease identified by the presence of extra uterine endometrial tissue that is dependent upon estrogen [1]. It occurs frequently among women in the general population, with an estimated prevalence of 6 - 10% [1]. The most common symptoms encountered in endometriosis include infertility, dyspareunia and chronic pelvic pain, and it is typically present on the pelvic peritoneum, the rectovaginal septum or the ovaries [1,2]. A definitive diagnosis can only be made pathologically which needs asurgical intervention [3].

Various theories of pathogenesis have been proposed in the development of endometriosis. These include retrograde menstruation leading to implantation of refluxed endometrial tissue, the development of endometrial tissue from coelomic mesothelial cells that undergo metaplasia and lymphatic or hematogenous dissemination of endometrial cells [4]. The definite mechanisms for formation of endometriosis has not been defined.

Advancements have suggested that endometriosis is not simply a local disease, but rather a chronic, multifaceted process [2]. As a result, its management can be challenging. Although medical, surgical and infertility treatments continue to be offered in women with endometriosis, more recent research has focused on targeting the disease at a molecular level [1,4].

Pelvic endometriosis is a challenging in gynecological practice, due to different symptoms and advanced stages in which the patients arrive to us [5]. Endometriosis is most often diagnosed in the fourth decade of life. Patients with this condition present with a variety of symptoms, and must always undergo thorough questioning to properly guide diagnosis and monitor treatment results [6]. Demographic and epidemiologic parameters in women with endometriosis differ, depending whether chronic pelvic pain or infertility are the presenting symptoms. In the pain group, diagnostic delay is longer and endometriosis at diagnostic laparoscopy more advanced, indicating progressiveness of the disease. During the last 15 years, diagnostic delay steadily decreased and the frequency of advanced endometriosis at first diagnosis declined [7].

The incidence, area, and volume of subtle lesions decreased with age, whereas for typical lesions these parameters and the depth of infiltration increased with age. Deeply infiltrating endometriosis was strongly associated with pelvic pain, women with pain having larger and deeper lesions. Because deep endometriosis has little emphasis in the revised American Fertility Society classification and after analyzing the diagnoses made in each class, considerations for a simplifying revision with inclusion of deep lesions are suggested [8].

It has been shown that multiparity, a history of abortion and lifelong irregular menstrual pattern decrease the risk of endometriosis in women with pelvic pain and infertility [9]. Transvaginal Ultrasound (TVS) is a reproducible method for assessment of the severity of pelvic endometriosis and shows good agreement with findings on laparoscopy [10].

We conducted a retrospective descriptive study at tertiary care hospital [Women Specialized Hospital (WSH), King Fahad Medical City (KFMC), Riyadh] during January 2006 to December 2013 [8 years]. Data analysis done using SPSS version 16. The purpose was to estimate the prevalence and age of peak presentation for our study population with endometriosis. We also gathered information regarding presenting symptoms, parity, any relationship between age and stages, stages of endometriosis, endometrioma – site, impact and ultrasound scan and in the follow up we looked into the recurrence risk and pregnancy rate.

As there have been no studies done previously regarding the impact of endometriosis in Saudi population, this study will help us to have an idea about the impact of endometriosis on our population.

Methodology

Medical records of patients admitted to Women Specialized Hospital, King Fahad Medical City, Riyadh, were retrospectively reviewed in the period from January 2006 until December 2013. 595 files were checked retrospectively, the list of our patients was extracted from our operative registry. All patients were operated by the same surgeon. In our inclusion criteria, patients' age group between 15 – 54 years, histologically proven endometriosis and coincidental finding of endometriosis were included. Patients who received empirical or medical treatment and discrepancy of ultrasound results compared to histopathology were excluded. All patients underwent laparoscopy except for one patient (0.17%) who underwent laparotomy due to extensive adhesions. Endometriosis staged according to American Society of Reproductive Medicine 1996. Ovarian cystectomy performed for patients with endometrioma.

The primary outcome is to assess prevalence of endometriosis in Saudi women at our tertiary center and peak age of presentation. Secondary outcome was, presenting symptoms, parity, relationship between age and stage of endometriosis, stages of endometriosis, endometrioma (site, impact and ultrasound scan), recurrence and pregnancy rate postoperative. Data analysis done using SPS version 16.

Approval from our ethics committee was sought prior to the study commencement.

Results

Figure 1 A and 1B depicts the total number of patients with endometriosis out of 595 patients in total. The data is broken down to the number of patients diagnosed yearly with endometriosis.

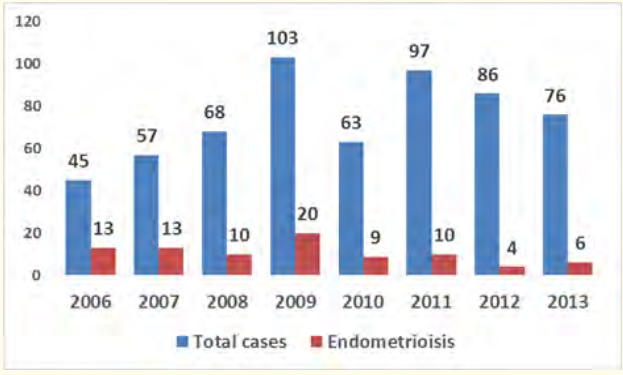


Figure 1 A: *Bar graph - prevalence of endometriosis: (number of cases).*

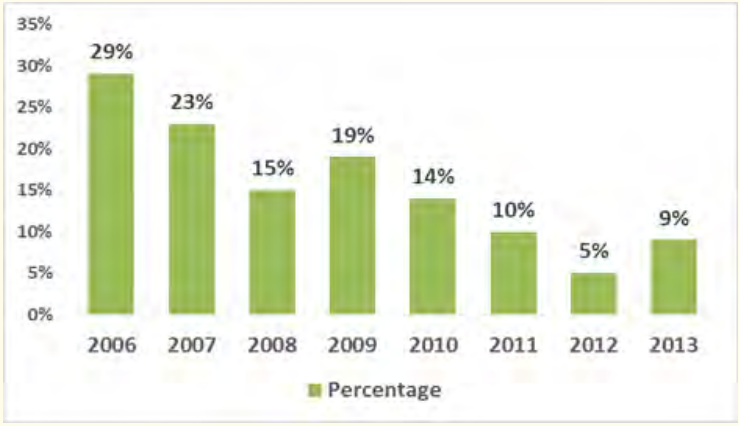


Figure 1 B: *Bar graph - prevalence of endometriosis: (percentage).*

Figure 2 depicts the prevalence of endometriosis was found to be 14.3%. Endometriosis was found in 85 patients in total. All 85 patients were proven histologically to have endometriosis. All underwent laparoscopy for the same except one patient who had a laparotomy due to extensive adhesions.

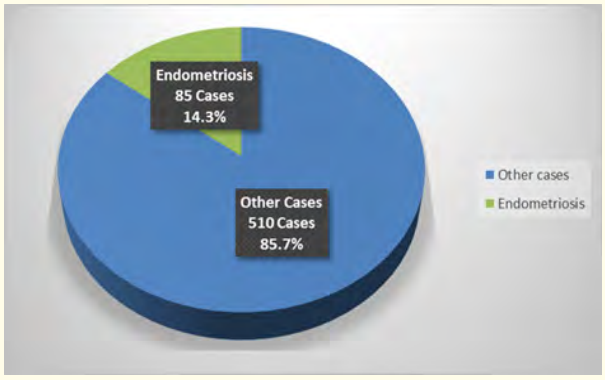


Figure 2: *Pie chart -for prevalence of endometriosis.*

Figure 3 shows peak age of presentation was between 30 - 34 years about 32.9% (28 patients) followed by 25 - 29 years and then 40 - 44 years. We would like to emphasis on the age between 15 - 19 years, who also had endometriosis.

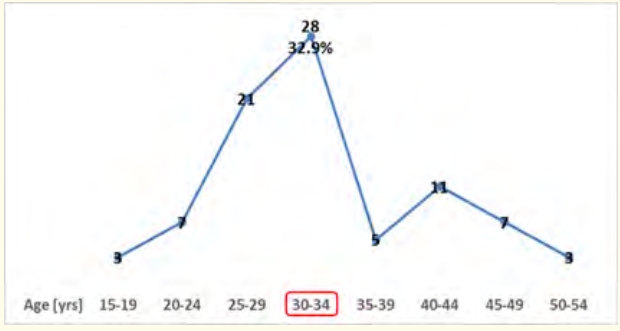


Figure 3: *Line graph - peak age of presentation.*

Figure 4 shows the impact of endometriosis on the single and parous women. 35.3 % of our patients were nulliparous in whom endometriosis was most prevalent followed by para1 with a prevalence of 15.3 % and 12.9% of our population were unmarried (single).

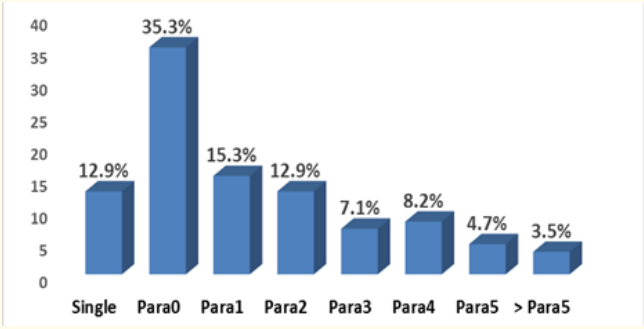


Figure 4: *Bar graph 3 Parity in correlation with endometriosis.*

Figure 5, we categorized the complaints in patients with endometriosis mainly into 3 categories, pelvic pain, infertility and others. If the patient had symptoms of pain and infertility we prioritized the symptoms bothering her the most. In others we included symptoms of abnormal uterine bleedings including menorrhagia, premenstrual spotting, and dyspareunia. The most common presenting symptom was pain 55.3% (47) followed by infertility 30.6% (26) and lastly other symptoms 14.1% (12).

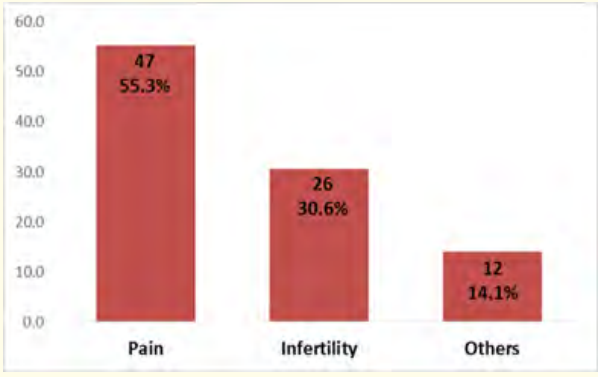


Figure 5: *Presenting symptoms.*

Figure 6- Endometriosis staged according to American Society of Reproductive Medicine 1996. Most patients were found to have stage four endometriosis 38.8% (33), 32.9% (28) patients were found to have stage three, whereas 17.6% (15) patients were in stage one. The least number of patients were in stage two 10.6% (9).

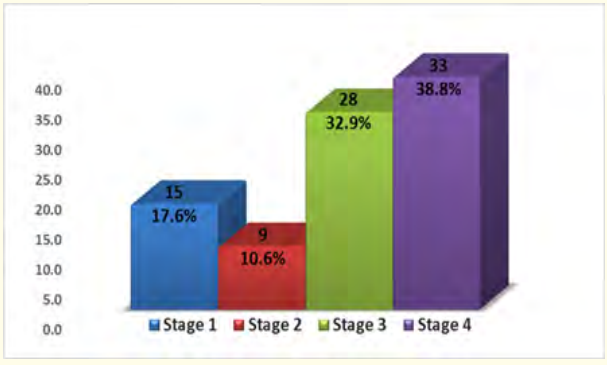


Figure 6: *Stages of endometriosis.*

Figure 7 A and 7 B- All patients with endometriosis who were staged according to American Society of Reproductive Medicine 1996 were clubbed together to give us the result that 30 - 34 years is the peak age of endometriosis prevalence with maximum patients with stage 4 endometriosis, followed by stage 3between 25 - 29 years, followed by stage 1 between 30 - 34 years and least patients with stage 2 between 30 - 34 years.

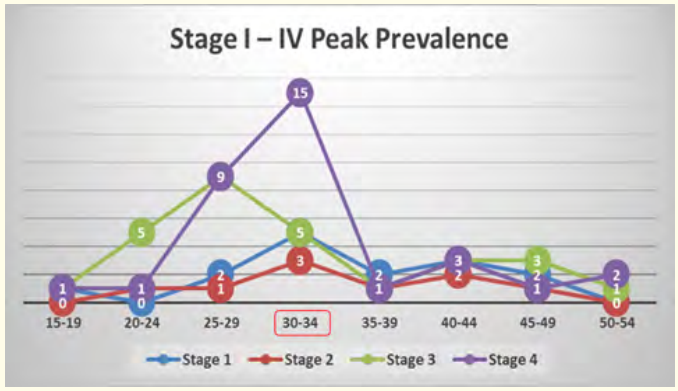
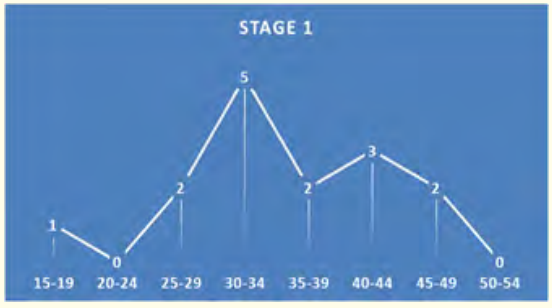
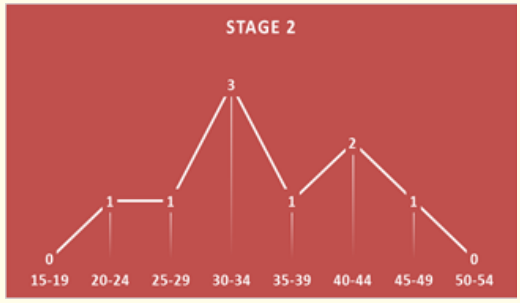


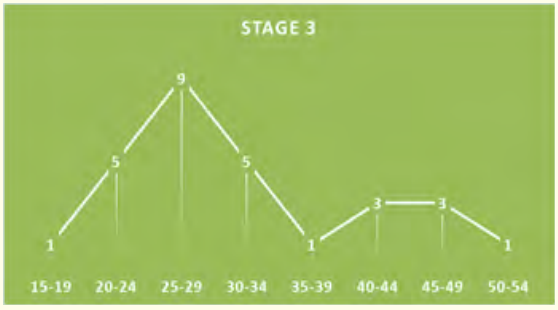
Figure 7 A: *Peak prevalence of endometriosis among all age groups.*



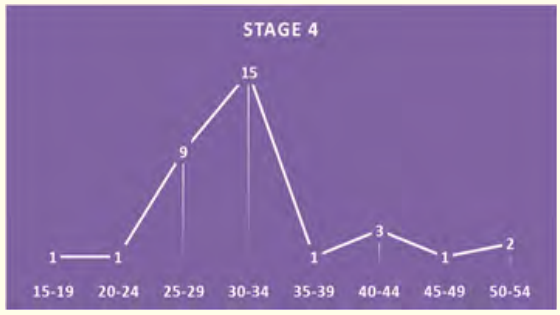
Line graph-Stage One.



Line graph -Stage Two.



Line graph -Stage Three.



Line graph - Stage Four.

Figure 7 B: *Relationship between Age and Stages of Endometriosis (one to four).*

Figure 8- All patients with endometrioma underwent cystectomy and only after histology results were labelled to have endometriomas.71.1% (61) were found to have endometrioma. Most commonly the endometrioma was found on the left side 44% (27) followed by 30% (18) on the right side and 26 % (16) were bilateral.

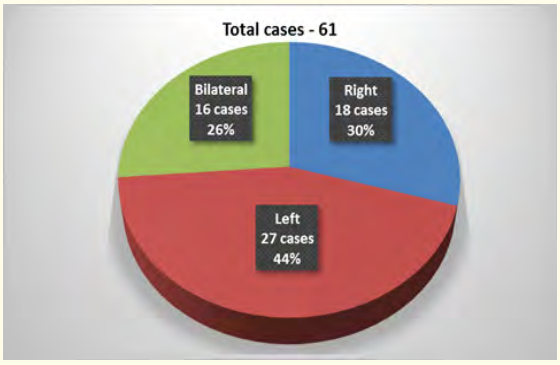


Figure 8: *Pie chart site of endometrioma.*

Table 1- We looked into the ultrasound report of all patients who were labelled to have endometriomas and later proved histologically. We calculated the sensitivity and specificity of ultrasound in diagnosing endometriomas. The ultrasound sensitivity was found to be 75% and specificity was 80% for diagnosing endometriomas.

	USG +ve	USG -ve
HISTO +ve	45 (true +ve)	05 (false -ve)
HISTO -ve	15 (false +ve)	20 (true -ve)

Table 1: *Ultrasounds scan of endometrioma in correlation with histopathology result.*

Sensitivity was found 75%

Specificity was found 80%

Figure 9- Most of our patients with endometriomas were complaining of pelvic pain 57% (35) rather than infertility 36% (22).

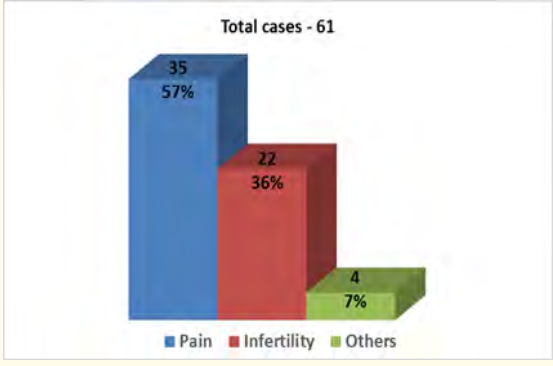


Figure 9: *Patients complaints.*

Figure 10- We were able to follow up 39 patients out of 85 [45.9%], the conception rate was 38.8% (14) patients. Out of the 39 patients who were followed, only 15.4% (6) had recurrence.

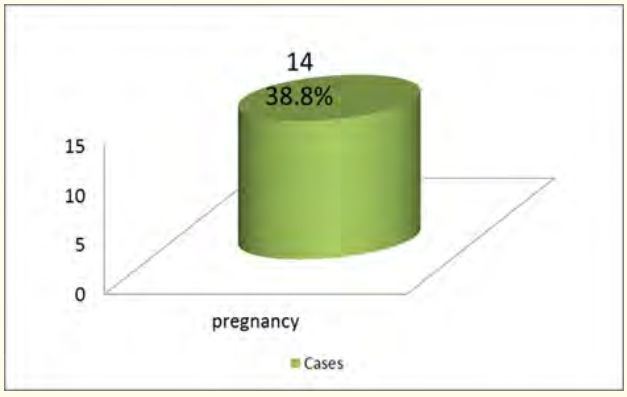


Figure 10: *Follow up patients.*

Discussion

The prevalence of endometriosis was found to be 14.3%. Endometriosis was found in 85 patients in total. All 85 patients were proven histologically to have endometriosis. All underwent laparoscopy for the same except one patient who had a laparotomy due to extensive adhesions. Our aim of the study was to have an idea of the prevalence of endometriosis in our hospital population. Peak age of presentation was between 30-34 years about 32.9% (28 patients). We would like to emphasis on the age between 15-19 years, who also had endometriosis. This age group patients are commonly seen in our outpatient departments with dysmenorrhea. We need to be more vigilant in this age group as we can miss the diagnosis of endometriosis. The prevalence of endometriosis is well distributed in all age groups emphasizing to always keep this as a differential diagnosis in our day to day practice, especially extremes of reproductive age group.

The complaints of the patient were categorized mainly into 3 categories, pelvic pain, infertility and others. If the patient had symptoms of pain and infertility we prioritized the symptoms bothering her most. In others we included symptoms of abnormal uterine bleedings including menorrhagia, premenstrual spotting, and dyspareunia. The most common presenting symptom was pain 55.3% (47) followed by infertility 30.6% (26) and lastly other symptoms 14.1% (12). Pain symptoms including dysmenorrhea, dyspareunia, chronic pelvic pain, and dyschezia are remarkably related to endometriotic nodules at the posterior part of the pelvis or those with deep invasions [11].

The impact of endometriosis on the single and parous women. 35.3 % of our patients were nulliparous in whom endometriosis was most prevalent followed by para 1 with a prevalence of 15.3 % and 12.9% of our population were unmarried. From this data it only proved that endometriosis is more prevalent in the nulliparous women and this only suggests that they can be affected by chronic pelvic pain and infertility. Reemphasizing the need to resort to early diagnosis of this condition to prevent irreversible damage especially in the nulliparous and single population. The mean interval between the onset of pain and definitive (surgical) diagnosis is 10.4 years [12].

All patients with endometriosis who were staged according to American Society of Reproductive Medicine 1996 were clubbed together to give us the result that 30 - 34 years is the peak age of endometriosis prevalence with maximum patients with stage 4 endometriosis, followed by stage 3 between 25 - 29 years, followed by stage 1 between 30-34 years and least patients with stage 2 between 30 - 34 years. By age 30 - 34 years stage 4 endometriosis is most prevalent. The question raised by this data, is endometriosis a progressive disease, can the early diagnosis and early treatment prevent its progression. The incidence, area, and volume of subtle lesions decreased with age, whereas for typical lesions these parameters and the depth of infiltration increased with age. Deeply infiltrating endometriosis was

strongly associated with pelvic pain, women with pain having larger and deeper lesions. Suggestive evidence is presented to support the concept that endometriosis is a progressive disorder, and it is demonstrated that deep endometriosis is strongly associated with pelvic pain [13].

71.1 % (61) were found to have endometrioma. Most commonly the endometrioma was found on the left side 44 % (27) followed by 30 % (18) on the right side and 26 % (16) were bilateral. All patients with endometrioma underwent cystectomy and only after histology results, were labelled to have endometriomas. We calculated the sensitivity and specificity of ultrasound in diagnosing endometriomas. The ultrasound sensitivity was found to be 72.72% and specificity was 80% for diagnosing endometriomas. Most of our patients with endometriomas were complaining of pelvic pain 35 (57%) rather than infertility 22 (36%).Nonsurgical diagnostic approaches such as transvaginal ultrasonography and magnetic resonance imaging (MRI) perform poorly in the detection of peritoneal and ovarian implants and adhesions. However, both imaging methods perform well in detecting ovarian endometriomas, with ranges of 80 to 90% sensitivity and 60 to 98% specificity. Because of its lower cost, transvaginal ultrasonography is preferred over MRI in the diagnosis of endometriomas. Doppler ultrasonography may help in establishing the diagnosis; it shows characteristically scant blood flow to an endometrioma, normal flow to normal ovarian tissue, and enhanced flow to an ovarian tumor [14].

We were able to follow up 39 patients out of 85 [45.9%], the conception rate was 38.8% (14) patients. Out of the 39 patients who were followed, only 15.4% (6) had recurrence.

In a retrospective study of 892 post-laparoscopy patients with histologically confirmed diagnosis of endometriosis. Mean age was 33.2 ± 6.3 years, and 78.7% of patients were Caucasian. Most (56.5%) patients were nulliparous, and 62.2% reported dysmenorrhea as the chief complaint. Chronic pelvic pain was the most prevalent symptom, followed by deep dyspareunia, reported by 56.8% and 54.7% of patients respectively. Infertility was reported by 39.8% of the 892 patients in the sample. In conclusion endometriosis is most often diagnosed in the fourth decade of life. Patients with this condition present with multiple complaints, and must always undergo thorough questioning to properly guide diagnosis and monitor treatment results [15].

In another study a total of 383 women of child-bearing age who were hospitalized in gynecologic ward were investigated for their painful symptoms, of whom 192 were found to be patients with endometriosis (endometriosis group). The other 191 cases without endometriosis served as the control. The results showed that the frequency of dysmenorrhea, lower abdominal or pelvic pain, dyspareunia, anal pressure pain during menstruation were 65.6%, 44.3%, 30.2% and 32.3% respectively in patients with endometriosis, and 37.7%, 33.0%, 20.9%, and 20.4% respectively in the control, the former were all significantly higher than the later respectively. Whereas the frequency of all the painful symptoms and the severity of dysmenorrhea were not correlated with the stages of endometriosis. It is suggested that patients with endometriosis have more painful symptoms besides dysmenorrhea, which are very useful for better recognition and more accurate diagnosis of this disease [16].

Endometriosis is a common disease that affects about 20% of women of childbearing age. At transabdominal and endovaginal ultrasound, in 90% of cases, ovarian endometriosis appears as a homogeneous lesion with low level echoes most often associated with clots. However this modality is insufficient to detect associated lesions. MRI is as accurate as ultrasound to detect ovarian endometriosis which most often appears with a signal higher than that of adipose tissue on T1W images and a bright signal area on fat suppressed images. The main advantage of this examination is not only to detect small ovarian implants but to also detect associated subperitoneal implants. These lesions involving the bladder as well as posterior structures such as the uterosacral ligaments, rectovaginal septum, and rectum appear as fibromuscular masses containing hyperintense signal areas on T1W images, or as purely fibrotic lesions that can be quite difficult to diagnose. Laparoscopy remains the procedure of choice to detect peritoneal implants [17].

Another study was undertaken to analyze the frequency and the determinants of long-term clinically detectable recurrence rate of deep, ovarian, and pelvic endometriosis. The clinical data of 1106 women with first diagnosis of endometriosis observed. The 4-year recurrence rate was 24.6%, 17.8%, 30.6% and 23.7%, respectively, for cases of ovarian, pelvic, deep, and ovarian and pelvic endometriosis ($P < 0.05$). The recurrence rates decreased in all groups (with the exception of ovarian endometriosis) in the class age 34 years or older, these findings were significant ($P < 0.05$). A pregnancy after diagnosis was associated with a reduced risk of recurrence. The study shows that the recurrence rates of endometriosis were higher in case of deep endometriosis and that the risk factors for recurrence were similar among women with endometriosis at different sites [18].

Despite being quite frequent and having serious implications in terms of symptomatology and fertility, data on incidence and prevalence of endometriosis following gold standard definitions are dramatically lacking. The average time from onset of symptoms to diagnosis in industrialized countries still ranges from five to ten years [19]. The public health burden of endometriosis remains unknown, because the disease can be diagnosed accurately only by laparoscopy, laparotomy or hysterectomy, and magnetic resonance can be used only for lesions larger than 1 cm in diameter. In addition, many women are asymptomatic and some lesions might heal spontaneously without a diagnosis having been previously [20]. A great variation exists in literature on both incidence and prevalence estimates as often, even in studies clearly defining endometriosis as presence of endometrial tissue outside the uterine cavity [21].

The drawback of our study is that were all patients with endometriosis picked up as some patients may be having endometriosis in our hospital. But we wanted a data for prevalence of this condition in this part of the world. Including more patients in future endeavors is encouraged. Although the included evidence is limited, exploring the diagnosis of endometriosis in women seeking help with these specific and nonspecific symptoms at times could result in earlier diagnosis of endometriosis and improve the quality of life for our patients. Another drawback in our study regarding the follow up of the patients.

We are also aware of the fact that not all cases of endometriosis ended up been identified, for several reasons among which the lack or irrelevance of the symptoms, or the lack of association between symptoms and the disease, even by medical doctors. Lastly a national registry to be implemented, to know the impact of the disease and the effect of it on the reproductive life of our patients. Increased awareness and early intervention by our physicians may be the most important aspect for endometriosis as a delay in diagnosis is almost always present. At the same time we need to increase the awareness of endometriosis among the general population.

Conclusion

The prevalence of endometriosis was found to be 14.3%. Peak age of presentation was between 30 - 34 years about 32.9% (28 patients). We would like to emphasis on the age between 15 - 19 years, who also had endometriosis. This age group patients are commonly seen in our outpatient departments with dysmenorrhea. We need to be more vigilant in this age group as we can miss the diagnosis of endometriosis. The prevalence of endometriosis is well distributed in all age groups emphasizing to always keep this as a differential diagnosis in our day to day practice, especially extremes of reproductive age group avoiding undue delay in diagnosis and appropriate timely management.

Competing Interests

The authors have no conflict of interest to disclose related to the study.

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Bibliography

1. Giudice LC and Kao LC. "Endometriosis". *Lancet* 364.9447 (2004): 1789-1799.

2. Bulun SE. "Endometriosis". *New England Journal of Medicine* 360.3 (2009): 268-279.

3. "Practice bulletin no. 114: management of endometriosis". Obstetrics and Gynecology 116.1 (2010): 223-236.

4. Falcone T and Lebovic DI. "Clinical management of endometriosis". *Obstetrics and Gynecology* 118.3 (2011): 691-705.

5. Socolov R., *et al*. "Studiuprivind diagnosticul clinic sipara clinical endometriozeipelvine". *Revista Medico-Chirurgicală* A *Societăţii De Medici* ŞiNaturalişti *Din Iaşi* 113.3 (2009): 799-802.

6. Bellelis P., *et al*. "Epidemiological and clinical aspects of pelvic endometriosis-a case series". *Revista Da AssociaçãoMédica Brasileira* 56.4 (2010): 467-471.

7. Dmowski WP., *et al*. "Changing trends in the diagnosis of endometriosis: a comparative study of women with pelvic endometriosis presenting with chronic pelvic pain or infertility". *Fertility and Sterility* 67.2 (1997): 238-243.

8. Koninckx PR., *et al*. "Suggestive evidence that pelvic endometriosis is a progressive disease, whereas deeply infiltrating endometriosis is associated with pelvic pain". *Fertility and Sterility* 55.4 (1991): 759-765.

9. "Risk factors for pelvic endometriosis in women with pelvic pain or infertility. GruppoItaliano per lo Studio dell' endometriosis". *European Journal of Obstetrics, Gynecology, and Reproductive Biology* 83.2 (1999): 195-199.

10. Holland TK., *et al*. "Reproducibility of assessment of severity of pelvic endometriosis using transvaginal ultrasound". *Ultrasound in Obstetrics and Gynecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology* 41.2 (2013): 210-215.

11. Leng JH., *et al*. "Relationship between pain symptoms and clinico-pathological features of pelvic endometriosis". *Zhonghua Fu Chan KeZaZhi* 42.3 (2007): 165-168.

12. Hadfield R., *et al*. "Delay in the diagnosis of endometriosis: a survey of women from the USA and the UK". *Human Reproduction* 11.4 (1996): 878-880.

13. Koninckx PR., *et al*. "Suggestive evidence that pelvic endometriosis is a progressive disease, whereas deeply infiltrating endometriosis is associated with pelvic pain". *Fertility and Sterility* 55.4 (1991): 759-765.

14. Brosens I., *et al*. "Diagnosis of endometriosis: pelvic endoscopy and imaging techniques". Best Practice and Research Clinical Obstetrics and Gynaecology 18.2 (2004): 285-303.

15. Bellelis P., *et al*. "Epidemiological and clinical aspects of pelvic endometriosis-a case series". Revista Da AssociaçãoMédica Brasileira 56.4 (2010): 467-471.

16. Zhou Y and Wu B. "Painful symptoms of pelvic endometriosis". *Zhonghua Fu Chan KeZaZhi* 30.1 (1995): 30-33.

17. Buy JN. "Pelvic endometriosis. Endométriosepelvienne". *Journal De Radiologie* 82 (2001): 1867-1879.

18. Busacca M., *et al*. "Determinants of long-term clinically detected recurrence rates of deep, ovarian, and pelvic endometriosis". *American Journal of Obstetrics and Gynecology* 195.2 (2006): 426-432.

19. Caterina Morassutto., *et al* "Incidence and Estimated Prevalence of Endometriosis and Adenomyosis in Northeast Italy: A Data Linkage Study". *PLOS One* 11.4 (2016): e0154227.

20. Gylfason JT., *et al*. "Pelvic endometriosis diagnosed in an entire nation over 20 years". *American Journal of Epidemiology* 172.3 (2010): 237-243.

21. Leibson CL., *et al*. "Incidence and characterization of diagnosed endometriosis in a geographically defined population". *Fertility and Sterility* 82.2 (2004): 314-321.

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