

Endometriosis – Evaluation of Diagnostic Modalities

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Summary

This study analyzed the various methods used in the diagnosis of endometriosis in women namely transvaginal sonography and laparoscopy. Nineteen cases were studied in whom both transvaginal sonography and laparoscopy were done. Transvaginal sonography could detect 39 (39.4%) of the cases with abnormal pelvic findings and 60 (60.6%) of the cases were not detected on sonography. Of the 60 (60.6%) cases which had abnormal pelvic findings and were not detected by transvaginal sonography 50 (83.3%) cases had subtle findings like endometriotic spots, blebs and vesicles showing that transvaginal sonography has not missed gross lesions but only minor lesions which do not require treatment. In 10 (16.6%) of the cases which were not detected on transvaginal sonography the abnormal finding was chocolate cyst where the size of the endometrioma was less than 1 cm. Out of 99 cases the maximum number of cases 80 (80.8%) which were detected on laparoscopy had adhesions or chocolate cyst or both. Transvaginal sonography could detect 29 (74.3%) of the cases of endometrioma of ovary. This study shows that transvaginal sonography could identify chocolate cysts in most of the cases. However subtle findings which are seen only on laparoscopy require treatment unless associated with anatomical alteration. Transvaginal sonography should be the first line of investigation. We recommend laparoscopy after initial aggressive management has failed and when there are no positive transvaginal sonographic findings or there are no positive symptoms or signs.

Introduction

Endometriosis is defined as the presence of endometrial tissue (glands and stroma) outside the uterus. Endometriosis is predominantly found in women of reproductive age group among all ethnic and social groups. Endometriosis is an estrogen dependent disease and is a dynamic and progressive condition which is ameliorated after pregnancy. The risk is seven times greater if first degree relative has been affected by endometriosis. A high prevalence of endometriosis is found in women with pelvic pain and infertility and should be suspected in women with subfertility, dysmenorrhoea, dyspareunia or chronic pelvic pain. However it may be asymptomatic. Hence the role of ultrasonography and diagnostic laparoscopy in the diagnosis of endometriosis is evaluated in this study.

Material & Methods

A retrospective study was carried out in Manipal Assisted Reproduction Centre (MARC) and Department of Obstetrics and Gynaecology, Kasturba Medical College, Manipal from June 1992 to July 1997. On transvaginal sonography endometrioma of ovary can be diagnosed by its typical "stippled" appearance. At diagnostic laparoscopy, the pelvic and abdominal cavity were systematically investigated for the presence of endometriosis on bowel, bladder, uterus, tubes ovaries, cul-de-sac and broad ligament and characteristic findings included –

- 1) typical powder burn/gunshot lesions on serosal surface of peritoneum.
- 2) black, dark brown or bluish nodules
- 3) small cysts containing old haemorrhage surrounded

- by variable degree of fibrosis
- 4) red implants – petechiae, vascular, polypoid, haemorrhagic, red flame like
 - 5) serous or clear vesicles
 - 6) white plaques or scarring
 - 7) yellow brown peritoneal discoloration
 - 8) subovarian adhesions.

Analysis

Table I
Transvaginal sonography findings when laparoscopy was abnormal [n=99]

Transvaginal Sonography	Number
Abnormal	39 [39.4%]
Normal	60 [60.6%]

Table II
Distribution of findings in abnormal laparoscopy [n=99]

Findings	Number
Adhesions	17 [17.1%]
Chocolate cyst and adhesions	24 [24.2%]
Chocolate cyst	39 [39.3%]
Endometriotic spots	19 [19.2%]

Table III
Laparoscopic findings when transvaginal sonography was normal [n=60]

Findings	Number
Chocolate cyst and adhesions	10 [16.6%]
Endometriotic spots	19 [32%]
Blebs and vesicles	18 [30%]
Endometriotic spots and blebs	13 [22%]

Table IV
Laparoscopic findings when sonography was abnormal [n=39]

Findings	Number
Chocolate cyst and adhesions	17 [43.6%]
Chocolate cyst	12 [30.8%]
Adhesions	9 [23%]
Endometriotic spots	1 [2.6%]

Table V
Chocolate cyst with or without other associated findings

TVS	Laparoscopy		
	Chocolate cyst	Chocolate cyst with other associated findings	Total
Abnormal [n=39]	12 [30.8%]	17 [43.9%]	29 [74.3%]
Normal [n=60]	10 [16.7%]		10 [16.7%]

Out of 1301 laparoscopies that were done in 5 years women with endometriosis were 99 hence the incidence of endometriosis was 7.6%. Table I which shows the distribution of findings on transvaginal sonography when laparoscopy showed abnormal findings in 99 cases. Out of the 99 cases, 39 (39.4%) showed abnormal findings on sonography and 60 (60.6%) were normal on sonography. The details of abnormal findings identified on laparoscopy in 99 cases are shown in Table II. The maximum number of cases viz. 80 (80.8%) had adhesions or chocolate cyst or both. Table III which shows details of laparoscopic findings when sonography was normal. Fifty (83.3%) cases had subtle findings like endometriotic spots, blebs, vesicles, etc and 10 (16.6%) cases had adhesions and chocolate cyst, where the size of the endometrioma was less than 1 cm and ovaries were stuck to the uterus and puckering was present. The distribution of findings on laparoscopy when sonography was abnormal in 39 (39.4%) cases is shown in Table IV. Abnormal pelvic findings demonstrating endometriosis of ovary and adhesions were detected in 38 (97.4%) cases. Only 1 (2.6%) case was not detected by transvaginal sonography the abnormal pelvic finding being endometriotic spots. Table V shows the distribution of chocolate cyst as detected by laparoscopy or by transvaginal sonography. Transvaginal sonography could identify 29 (74.3%) of the cases of endometrioma of ovary and 16.7% of the cases were missed which were seen on laparoscopy. This was mostly due to small size of the endometrioma of ovary viz. <1cm.

Conclusion

This study proves that transvaginal sonography is a complementary tool for the diagnosis of endometriosis with gross lesions and should be done in all patients of infertility. Though transvaginal sonography can detect gross lesions like endometriotic cyst and can suspect gross adhesions, it can miss subtle findings. However subtle findings like endometriotic

spots, blebs and minimal adhesions which could be diagnosed by laparoscopy do not require treatment. Diagnostic laparoscopy even though being the gold standard for the diagnosis of endometriosis, is recommended only in selected cases where there is abnormal transvaginal sonography or clinical findings or initial conservative treatment has failed.

Discussion

The above study shows that transvaginal sonography is an important tool in the diagnosis of endometriosis. Our study included 99 cases of

endometriosis in whom both transvaginal sonography and laparoscopy were done. Transvaginal sonography could detect 74.3% cases of endometrioma of ovary. Friedman et al, 1985 in his study showed that 89.1% cases of endometriosis were not detected on sonography whereas our study shows that 60.6% cases were not detected on sonography and 83.3% of these had subtle findings like endometriotic spots, blebs and vesicles.

References

- 1) Friedman H, Vogelzang RI, Meldenson I B, Nieman HL, Cohen M. Radiology 157; 214: 1985.