



Comparison of clinico-pathological features of fertile and infertile women with endometriosis.

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Lecture outline

- Introduction
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 - Theory of origin
 - Classification
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INTRODUCTION

- Endometriosis was first described in 1860 by von Rokitansky [1] and since then has been defined as the presence of tissue resembling functioning endometrial glands and stroma outside the uterine cavity.

1. Rokitansky K. Uber uterusdrusen neubildung. Ztchr Gesselsch Arzte Wien
1860;16:577-1

THEORIES

- A number of theories attempt to explain the etiology of endometriosis.
Current theories regarding histogenesis include :
 - the transplantation of exfoliated endometrium [2, 3]
 - coelomic metaplasia [4], and
 - embryonic müllerian rests [5,6].

2. Sampson J.A., Peritoneal Endometriosis due to menstrual dissemination of endometrial tissue into the peritoneal cavity. *Am J Obstet Gynecol* 1927;14:422-69

3. Donnez J., Nisolle M., Casanas-Roux F., et al. Endometriosis: pathogenesis and pathophysiology. In: Shaw RW, editor. *Endometriosis*. Carnforth: Parthenon Publishing, 1990:11-29

4, Meyer R. The current question of adenomyosistis and adenomyomas in general and particularly seroepithelial adenomyositis and sarcomatoid adenomyometritis. *Zentralbl Gynecol* 1919;43:745-50

5. Lauchlan S.C. The secondary müllerian system. *Obstet Gynecol Surv* 1972;27:133-46

6. Fuji S. Secondary Müllerian system and endometriosis. *Am J Obstet Gynecol* 1991;162:219-25

AFS

- The revised classification of endometriosis proposed by The American Fertility Society (AFS) has been used in numerous retrospective clinical studies .
- This system is based on a 40-point scale and includes four stages [7].
- While classification strategies appear to correlate strongly with pelvic pain, the correlation between stage of disease and infertility is weak [8].

7. Revised American Society for Reproductive Medicine classification of endometriosis: 1996. Fertil Steril 1997;67:817-21

8. Schenken R.S., Guzick D.S. Revised endometriosis classification: 1996. Fertil Steril 1997;67:815-6.

MORPHOLOGICAL APPEARANCE

- NON-CYSTIC ENDOMETRIOTIC IMPLANTS
- ENDOMETRIAL CYSTS
- ENDOMETRIOTIC NODULES

RELATED ISSUES

- There are 4 clinical issues related to endometriosis:
 - INFERTILITY
 - PAIN
 - ASYMPTOMATIC CYST
 - MALIGNANCY
 - ↑ relative risk for ovarian cancer, lymphoma and other
 - EAOOC

- Despite over 130 years of investigations, the disease remains enigmatic.

AIM

- The purpose of our study was to find differences between infertile and fertile patients with endometriosis comparing:
 - clinical features and
 - morphological appearance of the disease.

STUDY DESIGN

- We evaluated medical records of women who underwent surgical treatment for endometriosis (n=284) between January 1999 and December 2003.
- Our study included only cases with histopathologically proved pelvic endometriosis (n=269).

- Three different types of morphological appearance were distinguished :
 - separate noncystic endometriotic implants (n=35),
 - noncystic endometriotic implants with endometriomas (n=59)
 - separate endometriomas (n=175).
- All patients were categorized into two groups named after infertile (n=45) and fertile cases (n=224).
- Clinical data were compared.

RESULTS

- 45 infertile cases (16,7%) were indicated for surgery because of:
 - Idiopathic infertility (n=23)
 - Infertility and ovarian cysts (n=12)
- In the remaining 224 fertile cases (83.3%) the indications for surgery were:
 - pelvic pain syndrome (n=13),
 - pelvic pain caused by persistent ovarian cysts (n=128) and
 - non-symptomatic cysts found during gynecological/USG examination (n=83).

Tabela 1. Data distribution among infertile and fertile endometriosis cases

Feature	Infertile N=45	Fertile N=224	Method	p-value
The mean age at the time of surgery (years)	29.91	36.83	test Wilcoxon	0.0000
Mean weight (kg)	59.044	63.431	test Wilcoxon	0.015
Mean height * (cm)	166.689	164.960	test Wilcoxon	NS
Mean age at the menarche (years) *	13.378	13.272	Test t-Student	NS
Mean length of menstrual cycle (days) *	24.822	25.491	Test t-Student	NS
Mean duration of menstrual flow (days) *	5.267	5.183	Test t-Student	NS
Mean value of systolic blood pressure (mmHg)	114.667	122.545	test Wilcoxon	0.0006
Mean value of diastolic blood pressure (mmHg)	73.444	79.509	test Wilcoxon	0.0007
Separate endometriomas	26.67(%)	94.20(%)	Test Pearson chi ²	0.0000
Noncystic endometriotic lesions	51.11(%)	5.8(%)	Test Pearson chi ²	0.0000
Endometriomas plus noncystic endometriotic lesions	22.00(%)	21.88(%)	Test Pearson chi ²	NS
AFS score (mean value)	20.578	43,541	Test Pearson chi ²	0.0000

* NS=not significant

Table shows that:

- infertile patients were younger (t-student. $p=0.0000$), had lower weight, lower blood pressure – either systolic ($p=0.0006$) or diastolic ($p=0.0007$),
- noncystic endometriotic implants occurred frequently among infertile women with endometriosis as opposed to endometriomas ($p=0.0000$).
- Mean value of AFS score in infertile cases was lower than compared to fertile ($p=0.0000$)

DISCUSSION

- In our research only 16.7% women were infertile although others studies have observed infertility in 25% to 39% of endometriosis cases [9, 10].

This difference could be explained by the fact that we have included in the infertile group only those women who had primary or secondary infertility for at least 24 months.

9. H. Hassa, HM Tanir, M. U. Symptom distribution among infertile and fertile endometriosis cases with different stages and localizations. *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 2005;119:82-86;

10. BA Lessey. Medical management of endometriosis and infertility. *Fertil Steril* 2000; 73:1089-1096).

- The present study has demonstrated that infertile patients are younger (t-student. $P=0.0000$) than those with fertile endometriosis.

No differences in mean age between the 41 fertile and 27 infertile endometriosis patients have been observed by H. Hassa et al [9], but a previous Polish study involving 384 women with endometriosis (170 infertile, 214 fertile) confirms our observation [10].

- The fact that infertile endometriosis patients have lower blood pressure than older and heavier fertile cases could be explained by the fact that blood pressure rises with age and weight [11, 12].
- But.....this relation exists when we compared cases with the same age, weight and height (data from our unpublished study)

11. K. Kristiansson et al. Blood pressure and pulse pressure development in a population sample of women with special reference to basal body mass and distribution of body fat and their changes during 24 years. *Int J Obes Relat Metab Disord.* 2003 Jan;27(1):128-33.

12. WB Droyvold et al. Change in body mass index and its impact on blood pressure: a prospective population study. *Int J Obes (Lond).* 2005 Jun;29(6):650-5.

- The fact that endometriomas were found more frequently in older women is not a surprise, either. The incidence of endometriomata, like other ovarian tumors, increases with age.
- But The observation that older fertile patients with endometriomas had never been treated for infertility before belies the previous thesis that endometriomas are the later sequelae of the disease, simply a manifestation of more advanced endometriosis.

CONCLUSION

- Our study confirms that noncystic endometriotic implants seem to be a clinically different entity than endometriomas.
- These implants are more strongly related to infertility than endometriomas.
- Rare infertile cases with endometriomas alone are older. Their fecundity could be decreased by the age. This requires further random analysis.

REMARKS

- The idea that peritoneal endometriosis, endometriosis of the rectovaginal septum and endometrial cysts must be considered as three separate entities with different pathogeneses appears most frequently [13, 14, 15, 16].

13. Fedele L., et al. Bladder endometriosis: deep infiltrating endometriosis or adenomyosis? *Fertil Steril* 1998; 69:972-975.

14. Nisolle M., Casanas-Roux F., Donnez J. Immunohistochemical analysis of proliferative activity and steroid receptor expression in peritoneal and ovarian endometriosis. *Fertil Steril* 1997;68:912-9.

15. Nisolle M., Donnez J. Peritoneal endometriosis, ovarian endometriosis, and adenomyotic nodules of the rectovaginal septum are three different entities. *Fertil Steril* 1997;68:585-595.

16. Farr R. Nezhad , Kalir T. Comparative immunohistochemical studies of endometriosis lesions and endometritic cysts. *Fertil Steril* 2002;78: 820-824

- Regarding this thesis, it seems obvious that the results of previous and future clinical investigations based on the AFS classification must be verified by taking a new look at endometriosis based on morphological appearance of the disease.

THANK YOU FOR YOUR ATENTION

