

Original research article

Risk factors for tubal ligation: regret and psychological effects Impact of Beck Depression Inventory

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Abstract

Objective: To investigate the relation of sterilization and depression in association with Beck Depression Inventory (BDI) and to analyze whether preoperative BDI scores have predictive value on satisfaction.

Methods: One hundred sixty-two women who had laparoscopic surgical sterilization were recruited into the study. Patients identified to have an intra-abdominal disease such as pelvic inflammatory disease, endometriosis or adnexial lesions, myoma uteri and previous cesarean delivery were excluded from the study. Women were administered the BDI 1 week prior to the operation and 1 year after the procedure, and patients were asked if they were satisfied with their new state of fertility.

Results: Mean BDI scores were 10.1 ± 2.7 and 12.9 ± 4.0 , preoperatively and postoperatively, respectively ($p < .001$). The difference between preoperative and postoperative BDI scores was affected by age and satisfaction status; younger patients had significantly increased postoperative scores. Dissatisfied women had higher pre- and postoperative BDI scores ($p < .001$). The difference between pre- and postoperative scores was increased significantly in the dissatisfied group. Preoperative BDI score was found to be a significant predictor of satisfaction status 1 year after the operation.

Conclusion: Preoperative application of BDI can identify women who are at greater risk for regret and dissatisfaction.

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Keywords: Tubal ligation; Sterilization; Satisfaction; Depression; Beck Depression Inventory

1. Introduction

Sterilization is an effective contraceptive method that has become widely used [1,2]. Undesirability of oral contraceptives in older women, relatively higher failure rates of alternative contraceptive techniques and easy accessibility of surgical sterilization contribute to the increasing popularity of sterilization. Effects of surgical sterilization on general health are clear, but its long-term psychological effects [3] and, in particular, its relationship with depression are not well established. The psychological status of women prior to the sterilization technique may be important in predicting future satisfaction and success of operation. Depression is one of the most prevalent illnesses among women, having a significant impact on quality of life. It has

been thought that depression and anxiety are associated with cyclical hormonal changes, which may be affected by tubal sterilization. The aim of this study was to investigate the relationship of sterilization and depression in association with the Beck Depression Inventory (BDI) and to analyze whether preoperative BDI scores have predictive value on satisfaction.

2. Material and methods

The study consisted of 162 healthy, married women who had laparoscopic surgical sterilization between March 1, 2001, and February 28, 2003, in Süleymaniye Maternity Hospital, Istanbul. The study was approved by the local ethics committee. Patients with no history of cesarean section and psychological disorders were included in the study. Women with a previous history of depression were excluded from the study. All patients were admitted to the hospital for surgical sterilization voluntarily.

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Table 1

Comparison of preoperative and postoperative BDI scores with satisfaction status 1 year after the operation

Mean BDI scores	Satisfaction status 1 year after the operation		p value
	Satisfied	Dissatisfied	
Preoperative	9.8±2.6 (mild)	11.7±2.4 (mild)	<.001
Postoperative	12.1±3.4 (mild)	17.8±4.3 (moderate)	<.0001

Data in parentheses indicate level of depression.

Patients were administered a personal information questionnaire and BDI 1 week prior to the operation and 1 year after the procedure. The patients were also asked if they were satisfied with their new state of fertility. The BDI, which demonstrates high reliability coefficients and good construct validity, consists of 21 items that measure the severity of depression symptoms. Each item is scored on a 4-point measure from 0 (*neutral*) to 3 (*maximum severity*). A score of <15 indicates mild depression, a score of 15–30 indicates moderate depression and a score of >30 indicates severe depression, respectively. The personal information questionnaire consisted of age, gravida, number of abortions and number of live births. Patients were also asked about their marital status during the study.

All patients signed an informed consent before the procedure and were hospitalized on the day of the procedure. The BDI is a self-rating instrument; there might well be a bias of presenting as less depressed in order to get the procedure. Therefore, patients were informed that the BDI was part of a research, and their score would not interfere with the operation decision. The operation was performed laparoscopically by one of two surgeons under general anesthesia. Both tubes were coagulated and cut by bipolar scissors. The abdomen was explored by scope, and patients identified to have an intra-abdominal disease such as pelvic inflammatory disease, endometriosis or adnexial lesions, or myoma uteri, were excluded from the study. All patients were discharged the next day.

Differences in the mean age, gravida, parity, number of abortions and BDI scores were analyzed using Student's *t* test. A paired Student's *t* test was used to analyze BDI scores in different groups. Linear and logistic regression analyses were performed to identify any significant predictor of BDI scores and satisfaction status. Receiver operating characteristic curve (ROC) was performed to define a cutoff value for significant predictors in regression analyses. Prediction profiler was analyzed, which displays the prediction of any chosen *X* value. Desirability of the actual regression model and a theoretic model can be analyzed on this graph. Overall desirability measure is shown on a scale from 0 to 1. An alpha level of <.05 was considered indicative of statistical significance; all tests were two-tailed. Statistical analyses were performed on a personal computer with SPSS for Windows, version 11.0 (SPSS, Chicago, IL, USA) and JMP version 5.0 (SAS Institute, Cary, NC, USA).

3. Results

Six women of 162 were excluded from the study due to laparoscopically diagnosed intra-abdominal disease. Data were collected from the remaining 156 women. The mean of age, gravida, parity and number of abortions were 34.6 ± 3.7 years old, 4.7 ± 1.1 , 2.9 ± 0.8 and 1.8 ± 0.8 , respectively. All of the patients were discharged the day after the operation. There was no complication in any of the patients.

Mean BDI scores were 10.1 ± 2.7 and 12.9 ± 4.0 , preoperatively and postoperatively, respectively ($p < .001$). The difference between preoperative and postoperative BDI scores was affected by age; younger patients had significantly increased postoperative scores. Gravida, parity and number of abortions did not affect the difference between preoperative and postoperative scores. The mean preoperative BDI scores in women <30 years old and in women >30 years old were 11.1 ± 2.3 and 9.9 ± 2.7 , respectively ($p > .05$). The mean postoperative BDI scores of women <30 (14.9 ± 5.0) was not significantly different from mean BDI scores of women >30 years old (12.5 ± 3.7 ; $p < .05$).

Patients were asked if they were satisfied 1 year after the operation. Eighty-six percent of patients were satisfied with their new state of fertility. The mean preoperative BDI scores in satisfied and dissatisfied women were 9.8 ± 2.6 and 11.7 ± 2.4 , respectively ($p < .001$). The mean postoperative BDI score in women who were satisfied with the operation was 12.1 ± 3.4 , and the mean postoperative BDI score in women who were dissatisfied with the operation was 17.8 ± 4.3 ($p < .0001$; Table 1). There is a great increase in BDI scores in the dissatisfied women postoperatively, as shown Table 1.

The preoperative and postoperative scores in both groups were analyzed by paired Student's *t* tests, which found a

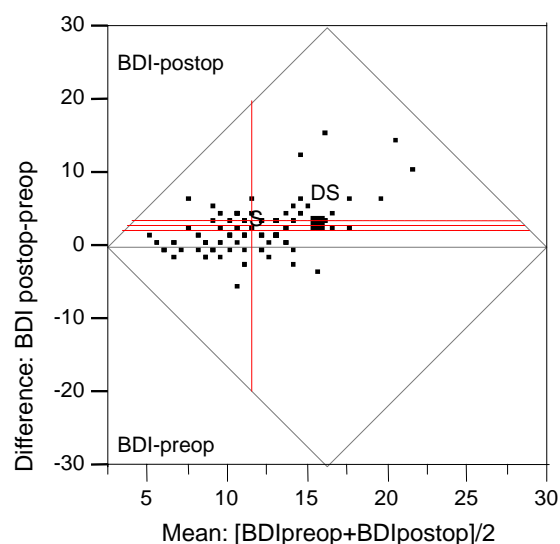


Fig. 1. Analysis of difference in preoperative and postoperative BDI scores in satisfied (S) and dissatisfied (DS) women 1 year after the operation by paired Student's *t* test.

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