Total abdominal hysterectomy with vault sling significantly reduces vault prolapse in vulnerable women
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Abstract
Prolapse of the vaginal vault after hysterectomy is not an uncommon complication. It may be due to faulty operative technique, uncorrected enterocele, congenital or acquired weakness of the supports of uterus. A prospective case control study was carried out in Dhaka Medical College Hospital and two private clinic from January 2002 to December 2006. The objective of the study were to find out the number of cases of vaginal vault prolapse and any specific or unusual post operative or remote complications after fixing an autologus sling to the vaginal vault. Age range of the patients were from 30-45 years. About 55% of women were from village and hard working. Due to poor nutritional status and multiple child birth with minimum birth spacing all the uterine support were very weak and vagina was found lax with first or second degree perinial tear. In all cases pouch of douglas was found very deep peroperatively. So vault sling was done in those vulnerable cases with rectus sheath sleeve. Average post operative hospital stay was 6 days. 75% of the patient complained pain in both iliac region along with the usual post operative pain up to 3rd or 4th day and 10% complained slight dragging pain at the same point up to 6 weeks post operatively. There was no vault prolapse during consecutive three (3) years followup period. The technique of vault sling is very simple & needs only few minutes to complete the procedure without extra financial cost.

Introduction
Vaginal vault prolapse occurs in women who have undergone normal hysterectomy. The top of the vagina come down partially or completely. The commonest reason for this is that, the uterine supports that were cut down during hysterectomy were not reattached to the vault properly or congenital or acquired weakness of supports of uterus or uncorrected enterocele. When the upper portion of the vaginal tissue losses its normal shape and sags or bulges down into the vaginal canal or out side the vagina it may cause pelvic heaviness, backache, stress incontinence, painful intercourse and difficulties in walking. It may occur alone or with bladder, urethra, rectum or small bowel due to weakness of the pelvic tissues and vaginal tissues and muscles.

Pelvic organ prolapse and stress incontinence are common disorder and affecting at least 30% of adult women. Women have a risk of 11% for at least one surgical correction of pelvic floor dysfunction and 30% procedure for recurrent prolapse. One of the arguments for performing an abdominal procedure is that, it maintains normal length and caliber of the vagina. Some times for various indications like fibroid uterus, pelvic inflammatory disease, suspected adhesions, associated ovarian tumour, endometriosis demands abdominal hysterectomy but factors aggravating the vault prolapse may be present. A less time consuming, cost effective autologous sling of the vault of the

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vagina during abdominal hysterectomy can prevent this complication in post hysterectomized women vulnerable for vault prolapse.

Objective
The objective of the study were to find out -
1. The proportion of vaginal vault prolapse occurring in women with sling and without sling operation.
2. Any specific post operative or long term complications after prophylactic sling.

Methodology
This prospective, case control study was carried out in Dhaka Medical College Hospital and two private clinics. Study period was from January 2002 to December 2006 including 3 (Three) years followup of each patient.

The women who required total abdominal hysterectomy but with very weak uterine support or very deep pouch of douglas or have some degree of genital organ prolapse or have to perform heavy work were the study population. By random selection some were selected for sling of the vaginal vault with the sleeve made from rectus sheath after completion of hysterectomy and some were selected for traditional method of total abdominal hysterectomy. Result was compared between these two groups. The process is ongoing but follow up result of a small series consisting of 40 patients were compiled in this study. Among these women 20 have sling for vaginal vault with rectus sleeve and considered as case and another 20 women having conventional hysterectomy were the control. Post operative pain, hospital stay, post operative dyspareunia, incisional hernia, micturation difficulties and subsequent vault prolapse were looked for.

Procedure of vaginal vault sling
Abdomen was opened by pfannenstiel incision 2 cm above the symphysis pubis in all cases for abdominal hysterectomy. After completion of total abdominal hysterectomy with vault closure a 2cm sleeve was prepared by rectus sheath. The sheath was divided at the middle. Passing each sleeve through the deep inguinal ring the medial end of each sleeve was taken into the abdominal cavity and enchored at the angles of the vaginal vault.

Results
Fourty (40) patients were studied in this series who were of different age group and total abdominal hysterectomy with or without salpingo-oophorectomy was done for a variety of indications.
In all cases the pouch of douglas was very deep. Due to poor nutritional status of the women and multiple child birth with minimum birth spacing supports of the uterus were weak. The vagina was lax with first or early second degree perineal tear. So sling was done in these cases with the rectal sleeve. Average hospital stay was 6 days.

Pain in both iliac region (at the base of the rectal sleeve) complained by 75% of the patients along with the usual post operative pain upto 3rd or 4th day.

Slight dragging pain at same point complained by 10% patients up to six weeks post operatively.

Complains of Dysparuenia after six weeks of operation was nil (0%) in sling group but 3 (15%) patient of nonsling group.

During 3 years followup period none of the sling group developed incisional hernia, vault prolapse, stress incontinence or any difficulties during micturation, but at the end of the three years about 6 (30%) patient developed stress incontinence and 3 (15%) developed vault prolapse in non sling group. Statistical analysis was done by Chi-square test, and result was highly significant e.g P value was <.001.

**Discussion**

Abdominal sacral colpopexy is considered the gold standard for vaginal apex fixation but in long term studies showed that it is not ideal for all and it has some severe morbidities. Laparoscopic uterosacral suspension needs higher level of laparoscopic skill and puts the ureters at risk of injury. In uterosacral suspension/modified McCall procedure attachment done in ipsilateral uterosacral ligament to the vaginal cuff. The author has searched for same type of studies done in home and abroad but could not find out. There are studies on uterine sling but no study for preventing the vault prolapse after hysterectomy by using prophylactic sling of vaginal vault with rectus sheath.

**Conclusion**

The technique of vault sling is very simple. Needs only few minutes to complete the procedure without extra financial cost. There is no added post operative compication but benefit is remarkable. So this procedure can be adopted for those women, who has predisposing or precipitating factors for vaginal vault prolapse in future.

**References**

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