

THE BENEFIT OF AN ANAL PURSE-STRING SUTURE TO DECREASE FECAL CONTAMINATION DURING VAGINAL SURGERY: A RANDOMIZED CONTROLLED TRIAL

Hypothesis / aims of study

To evaluate benefit of anal purse-string suture in prevention of fecal contamination during vaginal surgery and microbiologic contamination measured by pre and postoperative perineal cultures.

Study design, materials and methods

This institutional review board-approved randomized-controlled trial enrolled patients aged over 18 years undergoing vaginal surgery at a tertiary care center from January 2014 to December 2015. We performed anal purse-string suture using silk 3-0 (suture group, Figure 1) compared with no suture (control group). We excluded patients with pregnancy, perineal infection, rectal prolapse, perineal or perianal lesions, hemorrhoids, rectovaginal fistula, fecal incontinence, anal sphincter defect and inflammatory bowel disease. All patients were informed and consent. Computer-blocked randomization program was used. Primary outcome was perioperative gross contamination observed by surgeon and scrub nurse. Secondary outcomes were new contamination which is shown from perianal skin cultures collected firstly after sterile preparation and secondly after finishing operation. Perioperative data were collected from the hospital record. Data was analyzed by STATA using Chi-square test and Fisher exact test for categorical data, and Student's test and Mann-Whitney U test Wilcoxon Rank Sum test for continuous data.

Results

Forty-five patients were randomized and one of them was excluded (Figure 2). There were no statistical significance in two groups including age, body mass index, medical history, diagnosis, operation, estimated blood loss, operative time, and post-operative stay. The rate of gross contamination was not statistically significant in suture group compared with control group (4.55% vs. 4.55%, $P=0.756$) by intention to treat analysis. Per protocol analysis also showed no statistical significance in the rate of gross contamination (4.76% vs. 4.35%, $P=0.733$). One patient in suture group had gross contamination possibly by inadequate suture strengthening. According to intention to treat analysis, laboratory results demonstrated no statistical significance in new contamination, which was defined as pre-operative negative culture and post-operative positive culture (9.09% vs. 18.18%, $P=0.332$). For per-protocol analysis, there was no statistical significance between two groups (4.76% vs. 21.74%, $P=0.114$). Postoperative pain score was higher in suture group, however, not statistically significant (3.29 ± 2.79 vs. 2.13 ± 2.12 , $P=0.128$). Only one patient had surgical site infection in this study. Two of the patients was diagnosed with post-dural puncture headache and received spinal blood patch

Interpretation of results

No statistical significance in fecal gross contamination and new contamination, which was defined as pre-operative negative culture and post-operative positive culture by using per-protocol analysis and intention to treat analysis.

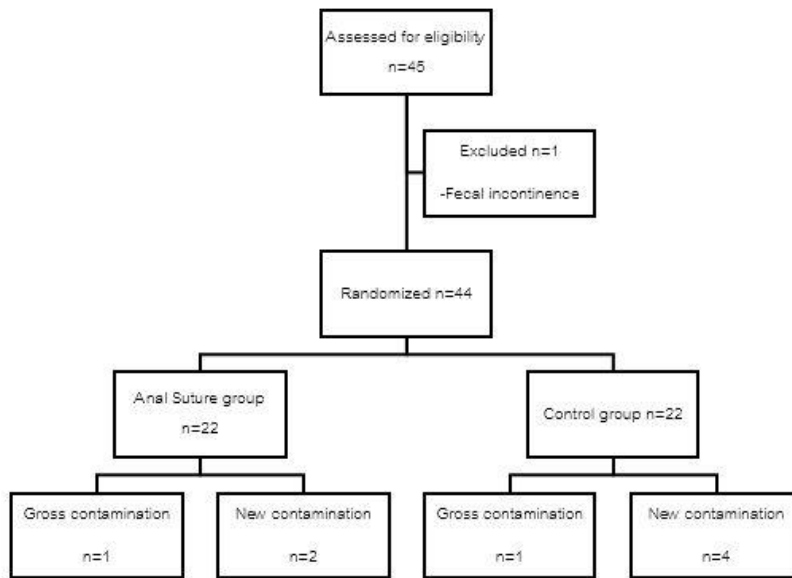
Concluding message

An anal purse-string suture could be beneficial for prevention of fecal contamination during vaginal surgeries and proved no harmful effects to patients. However, there was no statistical differences of gross and microbiologic contaminations between two groups.



Suture group

Figure 1



Intention to treat analysis

Figure 2

References

1. Lambrou NC, Buller JL, Thompson JR, Cundiff GW, Chou B, Montz FJ. Prevalence of perioperative complications among women undergoing reconstructive pelvic surgery. *American journal of obstetrics and gynecology*. 2000;183(6):1355-60.
2. Biller DH, Guerette NL, Bena JF, Davila GW. A prospective, randomized controlled trial of the use of an anal purse-string suture to decrease contamination during pelvic reconstructive surgery. *International Urogynecology Journal*. 2008;19(1):59-63.

Disclosures

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