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CASE REPORT

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Gauze packing for aspirin-induced hemorrhage in vaginal hysterectomy

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Abstract Intra-abdominal packing has been used to control massive hemorrhage in many difficult situations. Gynecologists are finding it increasingly useful in controlling persistent hemorrhage in a variety of situations. Recently we found it necessary to use packing for persistent brisk bleeding during 'vaginal hysterectomy' in a patient on aspirin therapy for heart disease. We could find no similar report in the literature and now describe our experience.

Keywords Aspirin therapy · Gauze packing · Vaginal hysterectomy

Abbreviations *INR* International normalized ratio

Introduction

Intra-abdominal packing has been used to control massive hemorrhage in many difficult situations. For a long time general surgeons have used it for uncontrollable bleeding in liver trauma [1], and more recently pelvic packing has been found to be valuable in maintaining hemostasis in difficult rectal cancer excisions [2]. Gynecologists are finding it increasingly useful in controlling persistent hemorrhage after abdominal hysterectomy [3], during gynecologic cancer surgery [4], and even in bilateral oophorectomy [5]. In the presence of coagulopathy, packing has been successfully used to control bleeding from the injured spleen [6].

Recently we found it necessary to use packing for persistent brisk bleeding during 'vaginal hysterectomy' in a patient on aspirin therapy for heart disease. We could find no similar report in the literature and now describe our experience.

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Case report

A 73-year-old para 5^{+0} presented with a 5-year history of a mass protruding from the vagina associated with lower abdominal and back pain. The symptoms worsened with routine activity, and particularly with bowel and bladder voiding. She was known to suffer with ischemic heart disease and diabetes mellitus, but had no cardiopulmonary symptoms and the diabetic state was well controlled. A diagnosis of grade 4 pelvic organ prolapse was made and treatment by vaginal hysterectomy and repair was advised, providing that medical clearance was obtained. Her only medications were gliclazide and prophylactic aspirin (81 mg), daily. Preoperative fitness for anesthesia was ascertained, in conjunction with the medical team. Investigations included a complete blood count, platelets, prothrombin time, activated partial thromboplastin time, International Normalized Ratio, renal and liver function tests. Results were within normal limits, and so aspirin therapy was discontinued on the day before surgery.

At operation, moderate degrees of cystocele and rectocele were noted and the cervix was seen to descend to just outside the vaginal introitus. A midline incision was made in the anterior vaginal wall, the bladder was mobilized and the uterovesical peritoneum was opened. A circumferential incision was made on the cervix and sharp dissection employed in order to access the posterior peritoneum in the cul de sac.

Dense adhesions were noted between the posterior uterine wall and the anterior rectum in the pouch of Douglas. This dense adherence seemed to be preventing a greater degree of uterine descent. Dissection via the posterior vaginal wall would not permit entry into the peritoneal cavity, and so the uterus was freed mainly by blind dissection, thereby leaving a raw oozing area approximately 5×3 cm. Vaginal hysterectomy was performed.

All connecting pedicles were secured, but significant arterial bleeding was noted as brisk oozing from the entire raw surface (anteriorly, posteriorly and laterally). After diathermy coagulation

and much hemostatic suturing, there was still brisk diffuse arterial oozing. As a result, it was decided to pack the area and to reoperate about 48 h later.

Three large laparotomy gauze packs were inserted in a stepwise fashion as follows:

1. The peritoneal edges were grasped, drawn caudally, and the uppermost pack inserted at and above the peritoneal margin to compress the most cephalad point.
2. Two other packs were pressed into place, caudal to the first, effectively occupying the entire pelvis between the symphysis pubis anteriorly and the sacrum posteriorly.
3. The vaginal flaps were apposed to hold the packs in place, using mattress sutures.

Blood results on the morning of surgery showed a mild thrombocytopenia ($138\times10^3/\mu l$) and hemoglobin 12.0 g/dl. The low platelet level was attributed to aspirin usage, but was not considered sufficiently abnormal as to defer surgery. On the first postoperative day, after 2 units of blood had been transfused, the hemoglobin was 7.9 g/dl, platelets were $159\times10^3/\mu l$, prothrombin time 15 s (control 12 s), activated partial thromboplastin time 38 s (control 35 s) and INR 1.3. Blood loss was estimated to be 2 l.

Antibiotics were administered intravenously and comprised amoxicillin/clavulanic acid and metronidazole. Her vital signs remained stable, with no evidence of vaginal or abdominal hemorrhage. After 48 h she was returned to operating theater and the packs were removed.

No active bleeding was noted, and after excision of the redundant vaginal wall flaps, vaginal repair was effected using a continuous Vicryl midline suturing technique.

The patient's recovery was uneventful and she was discharged 2 days later. Histopathological laboratory analysis revealed that the uterus weighed 125 g, with benign atrophic changes and no fibroids.

Discussion

Vaginal hysterectomy and repair is considered to be the treatment of choice in women with grade 4 pelvic organ prolapse. Most presentations are in the elderly, and there are often medical considerations such as ischemic heart disease, diabetes and hypertension.

It is usual to obtain medical clearance for the condition and therapy needed, particularly any adjustments or discontinuation. In this patient, it was considered important to continue aspirin till the day prior to surgery, but in retrospect, conversion to low molecular weight heparin anticoagulation prophylaxis would have been a better choice for her, as the effects are easier to reverse.

Conservative measures such as Kegel's exercises and pessary insertion seldom work with this degree of descent, and complications of pessaries include vaginal infection, ulceration, and even malignancy.

A risk–benefit discussion of aspirin therapy was undertaken with the patient before surgery, but in view of the normal hematologic results she was keen to continue the aspirin medication.

Because packing has been useful in controlling hemorrhage in many difficult situations we are not surprised that it worked well in this particular case. One of the most important points in the effective use of this technique is the circumferential grasping of the peritoneal edges (using artery forceps), drawing them caudally and placing the first pack firmly above this margin. This technique effectively prevents retrograde bleeding into the peritoneal cavity, and also ensures that the other pelvic packs will be compressed between this firm cephalad pack and the securely closed vaginal vault caudally.

Although it is well recognized that aspirin can cause excessive oozing at surgery it was the extent of hemorrhage in this case that was unusual, and so we were not surprised that this particular complication had not been previously reported.

Dissection during vaginal hysterectomy and repair surgery opens up more 'raw' surfaces than does surgery for abdominal hysterectomy, and in this patient the dense posterior uterine wall adhesions further compounded the situation. Nowadays, many elderly patients are placed on antiplatelet therapy such as aspirin and clopidogrel, and so this problem may therefore become more prevalent, especially during vaginal hysterectomy.

A decision was made to return to operating theater after 48 h so as to allow enough time for controlled blood transfusion and cardiovascular compensation. This also allowed time for coagulation indices to return to normal. Earlier return, say after 24 h, was also considered, but an empirical decision was made favoring 48 h, as cardiovascular stability was being maintained and we wished to reduce the risk of provoking oozing once again.

We therefore recommend the use of packing as described here if brisk generalized oozing is encountered during vaginal hysterectomy, as opening the abdomen (despite being effective for a slipped pedicle) is very unlikely to improve access to a large oozing surface deep within the pelvis.

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