Morbidity after total abdominal hysterectomy

H. A. VAN COEVERDEN DE GROOT, M. A. JEEVA, K. D. GUNSTON

Summary

Total abdominal hysterectomy (TAH), the commonest major gynaecological operation performed at the Groote Schuur and Somerset Hospitals, is associated with considerable financial and social problems for the family. A retrospective series of 300 consecutive patients who had undergone TAH is presented. This series was analysed for factors influencing the prevalence of wound haematoma, sepsis and dehiscence, pain and decreased mobility, the main parameters of postoperative morbidity. The four factors found to be important in minimizing postoperative complications of TAH were: (*i*) the experience of the surgeon; (*ii*) the use of the Pfannenstiel rather than the subumbilical midline incision; (*iii*) closure of the skin with Dermalon rather than with black silk; and (*iv*) drainage of the wound.

S Afr Med J 1983; **63:** 515-516.

Total abdominal hysterectomy (TAH) is the commonest major gynaecological operation performed under the aegis of the University of Cape Town's Department of Obstetrics and Gynaecology, at the Groote Schuur and Somerset Hospitals in Cape Town. Some 650 such operations were performed in 1980.[1] Admission to hospital for TAH is associated with considerable financial and social problems for the family, and also makes heavy demands on scarce hospital beds. Postoperative morbidity, by increasing the length of hospital stay, adversely influences these problems. The main parameters of postoperative morbidity are wound haematoma formation, wound sepsis, wound dehiscence, pain and decreased mobility. This article analyses a variety of factors with regard to their effect on these postoperative complications. No recent published South African data on this subject are available.

Patients and methods

A retrospective series of 300 consecutive patients who had undergone TAH between 1 January and mid-June 1980 was studied. The following characteristics were analysed: (*i*) age; (*ii*) indication for TAH; (*iii*) seniority of the surgeon; (*iv*) type of skin incision; (*v*) type of skin suturing material used; and (*vi*) use of a wound drain. Exact methods for 2 x 2 contingency tables were used to calculate probabilities.

Department of Obstetrics and Gynaecology, University of Cape Town and Groote Schuur Hospital, Cape Town
H. A. VAN COEVERDEN DE GROOT, F.R.C.O.G., *Senior Lecturer in Community Obstetrics and Principal Specialist*
M. A. JEEVA, M.B. CH.B., *Registrar*
K. D. GUNSTON, M.R.C.O.G., *Senior Lecturer and Principal Specialist*

Date received: 23 April 1982.

Results

Age

Of the patients 3% were less than 30 years old, 88% were aged between 30 and 50 years and 9% were more than 50 years old.

Indication for operation

Menstrual abnormalities were the indication in 37% of the patients, fibromyomas in 32%, cervical intra-epithelial neoplasia in 13%, chronic pelvic inflammatory disease in 9% and other indications in 9%.

Seniority of the surgeon

Consultants operated on 54% of the patients, registrars on 45% and house surgeons assisted by consultants on 1%.

Type of skin incision

Pfannenstiel (transverse lower abdominal) incisions were made in 49%, subumbilical midline incisions in 42% and paramedian incisions in 9% of the cases. Consultants used the Pfannenstiel approach in 59% and registrars in 46% of their operations.

Skin closure

In 41% Dermalon (monofilament nylon) was used, in 35% black silk (braided nylon), in 13% Michel clips and in 11% Vicryl (polyglycolic acid).

Wound drainage

In 51% of the patients the wound was drained. The drain was either brought out through the incision or through a separate stab wound. No consistent pattern was detected. Of the Pfannenstiel incisions 69% were drained, and of the midline incisions 32%.

Wound haematoma, sepsis and dehiscence

In 64 patients a wound haematoma developed. Of these, 40 occurred in midline and 24 in Pfannenstiel wounds.

There were 30 cases of wound sepsis (10%), this nearly always occurring as a result of an infected haematoma. Of these, 17 occurred in midline and 13 in Pfannenstiel wounds. Registrars were responsible for 25 cases of sepsis, 14 in midline and 11 in Pfannenstiel incisions. Consultants accounted for 5 cases, 3 in midline and 2 in Pfannenstiel wounds.

Black silk was used in 17 of the septic wounds, 11 in midline and 6 in Pfannenstiel incisions. Dermalon was associated with 10 cases of sepsis (5 each in midline and Pfannenstiel wounds) and

Vicryl with 3 cases (1 in a midline and 2 in Pfannenstiel incisions). In 9 patients the wound was drained.

Wound dehiscence occurred in 4 patients, all of whom had a midline incision.

Pain and decreased mobility

Virtually all patients were allowed out of bed on the day after the operation. No detailed records were kept concerning postoperative pain and decreased mobility. Clinically, however, it was clear that the only significant parameter was the type of skin incision.

Patients with Pfannenstiel wounds complained less of pain, required less analgesia and found it far easier to get mobile than did those who had a midline incision.

Discussion

Age

There was no apparent effect of age on postoperative morbidity. As 88% of patients were between 30 and 50 years old, no meaningful comment is possible regarding younger or older women.

Indication for operation

The indication for TAH indirectly affected postoperative morbidity by influencing the type of skin incision used. Thus, a midline or paramedian approach was employed for a large fibromyomatous uterus. In cases in which the indication was menstrual abnormality or cervical intra-epithelial neoplasia, with a normal-sized or moderately enlarged uterus, a Pfannenstiel incision was usually made. In the patients with chronic pelvic inflammatory disease the skin incision varied. The importance of the type of skin incision will be discussed under the appropriate headings.

Seniority of the surgeon

The registrars in this series varied from being fairly junior to senior. The former operated on the less complicated cases, often assisted or supervised by a consultant. Consultants dealt with the complicated cases, as did the senior registrars.

Type of skin incision

The type of skin incision used had a marked influence on postoperative morbidity.

A paramedian approach was made only in 9% of the patients, and further analysis was therefore restricted to Pfannenstiel and midline incisions.

The effect of the indication for hysterectomy on the choice of skin incision has been mentioned. Consultants used the Pfannenstiel incision significantly more often than did the registrars ($P < 0,05$).

Skin closure

Michel clips and Vicryl combined were only used in 24% of the patients; these were excluded from further analysis. There was no significant difference between consultants and registrars in the choice of Dermalon or black silk. There was, however, a significant difference between the two suture materials as regarded postoperative wound sepsis.

Wound drainage

Pfannenstiel incisions were much more often drained than midline incisions, and the difference was statistically highly significant ($P < 0,001$). Although the relationship between wound drainage and haematoma formation was not explored, the former significantly affected wound sepsis.

Wound haematoma and sepsis

A wound haematoma developed in 21% of patients. Its occurrence in midline incisions was much more common than in Pfannenstiel incisions, the difference being statistically highly significant ($P < 0,01$).

Wound sepsis was the most important postoperative complication in this series. There was no statistically significant difference in its occurrence in Pfannenstiel and in midline wounds. Sepsis occurred much more often in patients operated on by registrars than by consultants, the difference being statistically highly significant ($P < 0,001$). There was, however, no significant difference in the sepsis rate according to the type of skin incision used by registrars. Skin closure with black silk was associated with significantly more sepsis than with Dermalon ($P < 0,05$). Drainage of the wound resulted in significantly less sepsis ($P < 0,05$).

Pain and decreased mobility

Clinically, the Pfannenstiel incision caused far less pain and interfered less with mobility than did midline wounds. These factors appear to be generally agreed upon.[2] The smaller number of wound haematomas further favoured the former approach.

Conclusions

This analysis has shown the importance of four factors in minimizing postoperative complications associated with TAH. Firstly, the effect of the experience of the surgeon was clearly demonstrated. A much higher sepsis rate occurred among patients operated upon by registrars than those operated upon by consultants. An appropriate level of registrar supervision remains essential. Secondly, it was shown that the Pfannenstiel incision should be used in preference to the subumbilical midline approach wherever feasible. Thirdly, Dermalon should be used to close the skin rather than black silk. Lastly, more frequent wound drainage should be considered. Pfannenstiel incisions are commonly drained but the reverse holds for midline wounds.

REFERENCES

1. Van Coeverden de Groot HA, Harrison VC, Kowen DE. *Annual Report of the Department of Obstetrics and Gynaecology, 1980.* Cape Town: University of Cape Town/Cape Provincial Administration, 1981.
2. Funt MI. Abdominal incisions and closures. *Clin Obstet Gynecol* 1981; **24:** 1175-1185.