

Benefits of antibiotic prophylaxis in laparoscopic gynaecological surgery

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Summary

The prevention of infectious complications by antibiotic prophylaxis has made traditional or laparoscopic surgery much safer but at the same time has contributed to an uncontrolled and often irrational use of every kind of antibiotic.

In this study we wanted to show that often mini-invasive surgery like laparoscopy can be practised without the use of antibiotics. Thus, postoperatively several patients undergoing laparoscopic, diagnostic and operative interventions were followed-up. The results showed that subjects without antibiotic therapy did not have any symptomatology that could be ascribed to bacterial infections.

In conclusion this study has demonstrated that laparoscopic surgery, especially without any complications, should follow the elementary rules of surgical techniques and surgical asepsis and that antibiotic prophylaxis is not always necessary.

Key words: Antibiotics; Laparoscopy; Gynaecology.

Introduction

The problem of infections is as old as surgery. The risk of infectious complications has been, since the beginning, one of the main drawbacks in the progress of this discipline. Only in the last decades has it been possible to obtain a drastic reduction in the frequency of surgical infections with efficient controls together with the development of more and more complex surgical techniques. The possibility of foreseeing infectious complications with the use of prophylaxis, the so-called "antibiotic cover", has on one hand reassured surgeons performing operations but on the other has also brought about an indistinct and irrational use of many antibiotic agents creating deep subversions in the environmental bacterial ecology. A consequence has been, and is now, the easy colonization of the skin surface, the oropharynx, the urinary tract, etc., of patients. It should be noted that there are possible secondary effects of the administration of antibiotics which include anaphylactic reactions (sometimes fatal), renal lesions and hemolytic crises. Unfortunately, it must be said that the use of antibiotic prophylaxis has become a routine, practically without any controls, as it is not influenced as it should be by the many factors which affect postsurgical infections: nature and site of the operation, general condition of the patient, predisposing factors that reduce the patient's immune defenses, and nature of the bacterial flora (a regular guest of the organs and particular body parts). It is clear that the necessity of the administration of antibiotics in the prevention and therapy of surgical infection is secondary to the observation of many rules which can be summarized as follows:

Antibiotic prophylaxis is indicated only when:

1) a serious contamination of the surgical field is certain;

2) the risk of infection is increased and compromises the patient's resistance;

3) the elementary rules of surgical techniques and surgical asepsis are not followed.

In operations of "sterile surgery" antibiotic prophylaxis could be unnecessary. In our opinion a particular argument for antibiotic prophylaxis in laparoscopic surgery should be made.

This kind of surgery in effect, deals with the pelvic organs in their protected environment, avoiding dessication and contamination, thus reducing bleeding and trauma to the tissues. What happens inside the cavity of the peritoneum was expressed by Manhes who coined the term "surgical endobloc" (endoperitoneal theatre) in that it could abolish the risks of exposure of the interior environment to the external one iatrogenic of the operating room [12].

Traditional surgery could not do anything about these aggressive factors correlated with this exposure because the abdomen was exposed by surgical incision. The fact that this exposure is tolerated by the organism testifies to its great ability to adapt. This adaptation made surgery possible, but it was not by virtue nor necessity of the surgery. None of these consequences can be favorable in that all are invariably harmful and it is difficult to create a hierarchy in aggressiveness.

In light of the facts, we think that laparoscopic surgery can be done without antibiotic prophylaxis if the main rules of asepsis of the environment and sterility of the surgical instruments are followed. We wanted to verify the reliability of this statement with this study.

Material and Methods

One hundred and twenty patients were treated with laparoscopic surgery for different gynaecologic pathologies; 25 (20.8%) had no antibiotic treatment because they were allergic;

Table 1.

Salpingectomy for extrauterine pregnancy	7
Excision of simple serous cysts	32
Excision of endometriosis cysts	19
Excision of dermoid cysts	9
Ovariectomy unilaterals	14
Ovariectomy bilaterals	6

Table 2.

Salpingectomy for extrauterine pregnancy	1
Excision of simple serous cysts	11
Excision of endometrioid cysts	2
Excision of dermoid cysts	2
Ovariectomies	4

15 (12.5%) were treated with piperacillin, 2 gr i.v., one hour before surgery; 25 (20.8%) with cefonocid bisodico, 1 gr i.v., one hour before surgery; 55 (45.8%) with amoxycillin clavulante, 1.2 gr i.v., one hour before surgery. Thirty-three (27%) patients underwent diagnostic laparoscopy while 87 (72.5%) had operative laparoscopy. Among the last, seven (8%) underwent salpingectomy for extrauterine pregnancy, 32 (36%) excision of simple serous cysts, 19 (21.8%) excision of endometriotic cysts, nine (10.3%) excision of dermoid cysts, 14 (16.1%) monolateral oophorectomy and six (6.8%) bilateral oophorectomy (Table 1). Among the 25 patients who were not treated with antibiotic therapy, five (20%) underwent diagnostic laparoscopy for sterility or pelvic pain and 20 (80%) operative laparoscopy (Table 2). Every patient had hematochemical checks before surgery, carried out in the same way. The patients were on the average 31.5 years old; the youngest patient was 11 and the oldest was 72. All surgical instruments were either disposable and thus used once or were sterilized in an autoclave.

Discussion

All patients were discharged 24-48 hours after surgery. None of the patients who were not treated with antibiotics experienced fever. Among the treated patients five (4.1%) had to continue the antibiotic therapy for seven days because of a slight fever (38.6 °C). For one it was due to a complication of the surgical technique with the development of a periumbilical haematoma that appeared on the fourth day but after draining there were no after-effects. Of the other patients, three were treated with piperacillin and one with cefonocid bisodico. Among the first three, two patients underwent excision of endometriotic cysts and the other one underwent salpingectomy for a tubal pregnancy.

The patient treated with cefonocid underwent excision of a dermoid cyst with rupture of the cystic wall and spillage into the abdominal cavity during stripping. None of the patients who underwent antibiotic therapy with amoxycillin clavulanate had fever. No patient treated with antibiotics had any counter or allergic reactions (an important factor when administering several drugs) with the exception of two patients given piperacillin who had a small urticarian reaction in the lower limbs with itching.

Conclusions

Our case series was not very large so the results need to be confirmed by other larger studies. However some reliable evaluations can already be assumed. The decision not to administer antibiotic prophylaxis to the 25 patients with positive anamnesis because of allergic reactions to antibiotics leads us to believe that this practice can often be avoided. Moreover, after surgery these patients had no fever. However protocols for asepsis and sterility must be followed stringently. When antibiotics are necessary for patient therapy clavulanate amoxicillin can be effective since after the surgery the patients administered this antibiotic had no fever. On the contrary the patients treated with piperacillin and cefonocid bisodico experienced fever.

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