

CASE SERIES

Continuous Local Analgesia in Postoperative Treatment of Large Incisional Hernias – Preliminary Results

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Background: The incisional hernias are frequent complications after laparotomy. Extended subcutaneous tissue dissection is often necessary for the treatment of large incisional hernias, and this procedure is frequently followed by a high intensity pain in the postoperative period. The aim of this study was to assess the postoperative patient comfort without using major analgesics.

Material and method: we present the preliminary results of an ongoing study from Surgery Clinic 1 of Emergency Clinical County Hospital of Târgu Mures, University of Medicine and Pharmacy Târgu Mures. The study comprises in the intraoperative insertion of a subcutaneous catheter (Pajunk InfiltraLong) placed on lay, through which we administered continuously Ropivacaine 0,5%.

Results: Ten patients have been included in the study by now. For 5 of the patients the wound infiltration was started with 7 ml/h in the first 6 postoperative hours, after which the rate decreased to 5 ml/h until the end of the 72 hours, when the catheter was removed. For 2 patients the wound infiltration was started with 10ml/h in the first 6 postoperative hours, after which the rate decreased to 7 ml/h in the first day, followed by 5 ml/h for the next two days. Two patients needed a minor analgesic in the immediate postoperative period and one patient needed major analgesia in the first 24 hours.

Conclusions: By using this method, postoperative analgesia can be achieved without using major systemic analgesics and a superior patient comfort can be achieved simply by adjusting the infusion rate

Keywords: incisional hernias, catheter, analgesia

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Introduction

The incisional hernias are a frequent complication after laparotomy. At least 15% of the patients which have undergone a laparotomy are susceptible to develop an incisional hernia in the next 10 years [1]. In a retrospective study conducted in the last five years in the 1st Surgery Clinic from the Emergency Clinical County Hospital of Târgu Mureş (Gherghinescu, Molnar, Copotoiu, *The 8th Conference of Surgery with international participation, 2014*), out of the 515 patients admitted for incisional hernias treatment, 16% had big incisional hernia (represented by a wall defect larger than 10 cm) and 34% presented a medium wall defect (between 5 and 10 cm). If the treatment of small and medium incisional hernias can be performed by laparoscopic or open surgery, for wall defects larger than 10 cm the open surgery remains the elected treatment [2]. In these techniques is often necessary to perform extended subcutaneous tissue dissection, which is usually associated with a high intensity pain in the postoperative period. The classical pain control often uses major analgesics, which can be followed by several side effects: nausea, vomiting, ileus, urinary retentions, and respiratory depression [3]. The aim of this study was to assess the postoperative patient

comfort in the postoperative treatment of large incisional hernias without using major analgesics.

Material and method

We present the preliminary results of an ongoing study from the 1st Surgery Clinic of the Emergency Clinical County Hospital of Târgu Mureş, University of Medicine and Pharmacy Târgu Mureş. The study comprises in monitoring the efficiency of continuous wound infusion with local anesthetics for the treatment of postoperative pain after large incisional hernia repair.

Ten patients were included in the study (four males and six females).

Inclusion criteria were:

- Patients admitted to the 1st Surgery Clinic of Emergency Clinical County Hospital of Târgu Mureş for incisional hernia repair
- Agreement to participate in the study by signing the Informed consent

Exclusion criteria were:

- Patient refusal
- Psychiatric disorders
- Ropivacaine known allergies
- Neoplasia
- Patients with small intestine resection
- Cardiac failure NYHA III-IV

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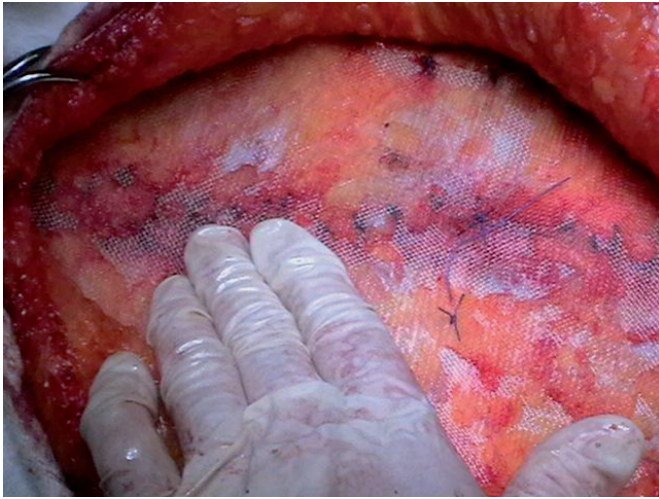


Fig. 1. Incisional hernia repair with prosthetic mesh

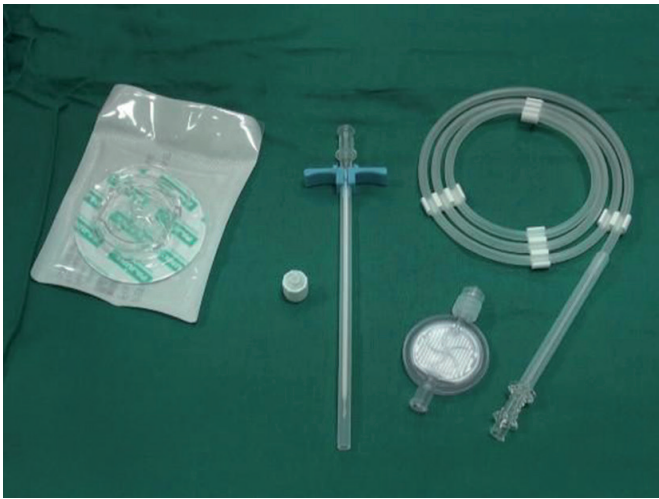


Fig. 2. PajunkInfiltraLong kit

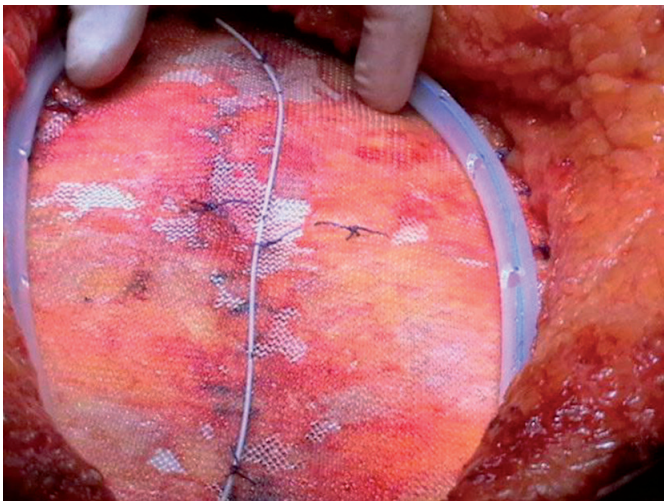


Fig. 3. Catheter placement

The therapeutic protocol used included:

- Abdominal wall dissection, with or without scar excision
- Incisional hernia repair with or without prosthetic meshes
- The insertion of subcutaneous drain

- Placing a subcutaneous catheter (Pajunk Infiltra Long) on-lay, above the aponeurotic sheet, along the suture line
- Priming the catheter and its filter with saline solution
- Skin fixation of the catheter
- Connection with the infiltration system

Analgesia protocol include intraoperative bolus infiltration of 10 ml Ropivacaine 0,5%, followed by continuous infiltration of the anesthetic with an elastomeric pump or an injectomat with a variable rate between 10 and 5 ml/h, until the catheter was removed at 72 hours postoperatory. If the 10 ml/h dose was inefficient, pain management was supplemented with minor analgesics, and only after this was possible to administer major analgesics. Intraoperative administered opioids were not included in the analgesia protocol.

Results

Out of the 10 patients enrolled, in 5 cases the wound infiltration was started with 7 ml/h in the first 6 postoperative hours, after which the rate decreased to 5 ml/h until the end of the 72 hours, when the catheter was removed.

For 2 patients the wound infiltration was started with 10ml/h in the first 6 postoperative hours, after which the rate decreased to 7 ml/h in the first day, followed by 5 ml/h for the next two days. Two patients needed a minor analgesic in the immediate postoperative period and one patient needed major analgesia in the first 24 hours. Two patients developed a subcutaneous hematoma, probably caused by administration of an overdose of anticoagulant medication, this complication being treated conservative. None of the patients presented nausea, vomiting, ileus, urinary retentions, or respiratory depression. Although it is well-known that men have a lower pain threshold then women, all the included males were in the group of 7 who did not require supplementary analgesics.

Discussions

This method was used for more than 15 years, and with the development of the catheters the use of continuous local analgesia has varied, currently being used in the postoperative period in obstetrics for C-section pain control [4], in orthopedics after hip and knee surgery [5], in cardiothoracic surgery after thoracotomy [6], in plastic surgery after mammoplasty [6] and in abdominal surgery after laparotomy [7]. Although the results obtained in many of these fields are favorable, there are also situations where continuous analgesia can be futile, as in inguinal hernias surgery that can be treated in a "day- case procedure" [7]. The literature lacks in information about the use of this method in postoperative treatment of incisional hernias, probably because the continuous spread of the laparoscopic approach for this type of hernias, which is not such a painful procedure. This could represent the reason why

the obtained results cannot be compared with other similar studies.

The fact that out of the total of 10 patients, 7 did not require supplementary analgesia is encouraging, however the small number of enrolled patients does not allow us to reach a final conclusion.

Conclusion

By using this method, postoperative analgesia can be achieved without using major systemic analgesics and patient comfort can be realised just by adjusting the infusion rates.

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