ULTRASOUND-GUIDED FASCIAL BLOCK OF THE INTERCOSTAL NERVES, NEW MULTIMODAL APPROACH FOR UPPER ABDOMEN LAPAROTOMIES: A DESCRIPTIVE STUDY.

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Pain management is a fundamental component of the multimodal rehabilitation strategy for abdominal surgery. Currently, the laparoscopic approach to abdominal pathologies has modified the analgesic approach, favoring the use of abdominal wall blocks versus epidural analgesia. Since 2015 we have been conducting ultrasound-guided fascial block of the intercostal nerves at the level of the 8th rib for open cholecystectomy (modified BRILMA).

We conducted a review of the postoperative analgesic techniques applied in the superior laparotomies at Hospital Medina del Campo.

Study goal: To evaluate the prevalence and intensity of acute postoperative pain in patients undergoing upper abdominal laparotomy and to assess the effectiveness of different analgesic techniques.

STUDY DATA:

SURGERIES

DEMOGRAPHY

	♂	♀
(%)	62	38
MEAN AGE	61	66

There are no statistically significant differences between groups.

ASA physycal status

ASA I	7
ASA II	16
ASA III	14

Most of them correspond to major abdominal surgery

ANALGESIC TECHNIQUES

Epidural catheter at L3-L4 with continous infusion of L-bupivacaine 0.125%

MODIFIED BRILMA: Patient position: supine

- Linear ultrasoun porbe: axial (transverse) plane, midaxillary line.
- Needle 80mm Ultrplex B.Braun ® : in-plane approach, cephalad-oriented needle.
- Ultrasound-guided block of the cutaneous branches at 8th rib level, midaxillary line
- The medication of choice was L-bupivacaine 0;5% (15 ml).

The local anesthetic injected at this level blocks the lateral and anterior cutaneous branches of the intercostal nerves. 7th-11th, wich give innervation to the upper abdominal wall.

RESULTS:

We've represented the results of the opioids administration in the OR, the pain scores and the additional needs of morphine at 48 hours in table 1.

	Number of patients	Fentanyl in the OR (µg)	EVN < 5	EVN > 5	Additional Morphine
Epidural analgesia	4	300	3	1	7 mgr
IV morphine	17	300-600*	12	5	< 10 mgr***
Modified BRILMA	15	150-600**	10	5	< 10 mgr

* The total ammount of fentanyl used in the OR depended on the kind of surgery and its complexity.

** The lower fentanyl dose (150 µg) corresponds to patients in whom the block was performed before surgery, and the maximum dose 600 µg was used in reconverted surgery when the block was performed at the end.

*** In one case we performed the block because of the high needs of morphine in the first 12 hours (18mgr).

After the 48hrs when the block was performed, patients will need additional morphine dose as a multimodal strategy for mild to severe pain.

There were differences in pain scores between groups in the postoperative period. Table 2.

EVN > 5	N° of patients	6 h	12 h	24 h	48 h
IV Morfina	5	3	2	0	0
Modified BRILMA	5	0	1	2	2

We found a better pain managment in the modified BRILMA group (EVN <2 at 12 houres later), wjth no differences after 48 hours between groups (mean EVN < 3).

Postoperative complications:

- Sedation and/or disorientation (38%,all of them from the IV morphine group)
- Postoperative nausea and vomiting (5 patients, no differences between groups), hypotension (1 patient epidural analgesia group).
- Lack of collaboration in respiratory rehabilitation because of sedation in 50% of IV morphine group patients.

In abdominal wall surgery (eventration) and open cholecystectomy, the ultrasound guided fascial block of the intercostal nerves performed uni or bilateral, present a higher quality of recovery (time-to-ambulation and diet tolerance) and a better pain management (EVN < 2). In open major surgery we didn't see any advantage in pain management between IV morphine and the modified BRILMA block, just the lower morphine dose in the first 48 hours (0/5 vs 7/11) in the block group with less sedation.

Although the sample size is small and more studies are needed, in upper abdominal laparotomy the modified BRILMA block provides a good postoperative pain control with less side effects and a better recovery quality, so it could be consider as an option in the multtimodal rehabilitation strategy.