Background

The sensory nerves to the abdominal wall traverse the neurovascular plane between internal oblique and transversus abdominis muscles. Accurate placement of a local anaesthetic agent into this potential space – the transversus abdominis plane (TAP) - produces a regional abdominal field block\(^1\) (TAP block). TAP blocks are widely used in open abdominal and groin surgery, their role in laparoscopic surgery is evolving within the context of enhanced recovery programmes.

Aims

This study aimed to establish the feasibility of a surgeon administered TAP block for laparoscopic cholecystectomy.

Subjects and Methods

A parallel case series design was chosen as appropriate to examine feasibility of the technique. Unselected, consecutive patients undergoing laparoscopic cholecystectomy were consented to receive TAP block as an alternative to LA wound infiltration.

Pneumoperitoneum was established by open technique, the laparoscope was introduced via the umbilical port and the epigastric port inserted as usual. The upper lateral (5mm) portsite was selected and the skin incised. The TAP block was performed with a simple green needle and syringe containing 15ml of 0.25% Chirocaine. Correct placement is confirmed by the appearance of a characteristic bulge as the transversus abdominis muscle is lifted inwards (see image)\(^2\). The same procedure was followed at the lower lateral portsite. The 5mm ports can be introduced immediately after injection and used as normal. The cholecystectomy was completed routinely and no further LA used.

Results

Case details are shown in the table. One TAP block patient was excluded from the analysis for conversion to open cholecystectomy. No technical difficulties or complications were encountered.

Pain scores

Mean pain VNRS at 4 hours was 2.06 (range 0-5) in the TAP block group and 5.38 (range 5-7) after standard care. The difference persisted at 24 hours, scores were 2.29 (0-6) and 4 (0-7) respectively.

Length of stay

There was a slight trend to reduced length of stay after TAP blocks, with more discharges within 24 hours.

Analgesia Consumption

Postoperative parenteral morphine consumption was slightly higher in the WI group. Consumption of oral analgesia consumption was not compared given the heterogeneity of agents administered.

Conclusions

This observational study shows that surgeon administered, laparoscopically guided TAP block, as part of a multi-modal analgesic regimen, is feasible for laparoscopic cholecystectomy. Subjects expressed positive opinions regarding pain control and abdominal wound pain was reliably controlled. Referred pain to the right shoulder was not controlled in one patient. The observed pain scores would be consistent with those required to facilitate same day discharge in the appropriate setting.

Further studies are required to establish optimal LA volume and concentration. Experimental studies will help to establish the efficacy of this technique for laparoscopic cholecystectomy and other laparoscopic procedures.

References