Transversus abdominis plane block

- Effect of transversus abdominis plane blocks in abdominoplasties on postoperative outcomes
- The evolving role of truncal fascial plane blocks in non-surgical pain therapy: a narrative review
- Paragastric Neural Blockade Effectively Controls Visceral Pain After Primary Laparoscopic Sleeve Gastrectomy
- Comparison of the efficiency of ultrasound-guided ESPB and TAPB on postoperative analgesia: a system review and meta-analysis
- Analgesia for living donor liver transplant: a systematic review of recent trials
- Letter to "Effect of erector spinae plane block and transversus abdominis plane block on quality of recovery and postoperative pain after laparoscopic hysterectomy; randomized, double-blinded clinical trial"
- Peri- and postoperative analgesic strategies in live donor hepatectomy: A national survey
- Evaluation of Ultrasound-Guided Erector Spinae Plane Block Versus Oblique Subcostal Transversus Abdominis Plane Block in Laparoscopic Cholecystectomy: A Comparative Study

The **Transversus Abdominis Plane (TAP) block** is a regional anesthesia technique designed to provide analgesia to the anterior abdominal wall. It involves injecting a local anesthetic into the plane between the transversus abdominis and internal oblique muscles, targeting the intercostal nerves (T7-T12), as well as the iliohypogastric and ilioinguinal nerves.

Clinical Applications: - **Postoperative analgesia**: Commonly used after abdominal surgeries such as:

1. Cesarean sections
2. Appendectomies
3. Hernia repairs
4. Laparoscopic procedures

- **Pain Management**: To reduce opioid use and associated side effects.

Technique: - **Ultrasound-guided approach** (preferred):

```
1. The patient is positioned supine or slightly lateral.
2. A high-frequency linear probe is placed transversely on the lateral
abdominal wall.
3. The layers of the abdominal wall are visualized: skin, subcutaneous
tissue, external oblique, internal oblique, and transversus abdominis
muscles.
4. The needle is inserted in-plane under ultrasound guidance to the
transversus abdominis plane.
5. Local anesthetic is injected, creating a visible separation between the
internal oblique and transversus abdominis muscles.
```

- **Landmark-based approach** (less common due to lack of precision):

```
1. Palpation of the iliac crest and mid-axillary line to locate the targeted
injection point.
2. Blind injection into the estimated TAP.
```

Benefits: - Effective pain relief for somatic pain originating from the abdominal wall. - Reduced reliance on systemic analgesics, particularly opioids. - Minimal complications when performed correctly.

Risks and Considerations: - Infection at the injection site. - Local anesthetic systemic toxicity (LAST) if excessive doses are used or injected intravascularly. - Incomplete block if the anesthetic does not spread adequately.

The TAP block is a safe and effective technique when performed with appropriate training and care, enhancing postoperative recovery in abdominal surgeries.

Prospective randomized controlled trials

To study the effect of transversus abdominis plane (TAP) block under direct vision with acupoint injection on the rapid recovery of patients after laparoscopic cholecystectomy.

Ninety-three patients undergoing laparoscopic cholecystectomy at Hangzhou Hospital of Traditional Chinese Medicine from January 2023 to December 2023 were selected and divided into control, TAP block under direct vision (TAP-DV), and TAP-DV with acupoint injection (TAP-DVA) groups using a random number table method. Postoperative VAS, Ramsay score, IL-6, CRP, and postoperative rehabilitation indices were compared among the three groups.

Results: The VAS pain score at 6 h after surgery was significantly lower in the TAP-DV and TAP-DVA groups than in the control group ($P < 0.05$). The VAS pain score at 24 h after surgery was significantly lower in the TAP-DV and TAP-DVA groups than in the control group ($P < 0.05$) and was considerably lower in the TAP-DVA group than in the TAP-DV group ($P < 0.05$). The VAS pain score 48 h after surgery was significantly lower in the TAP-DVA group than in the control and TAP-DV groups ($P < 0.05$). The mean IL-6 level was significantly lower in the TAP-DVA and TAP-DV groups than in the control group ($P < 0.05$). The postoperative nausea and vomiting rate was considerably lower in the TAP-DVA group than in the control group ($P < 0.05$). The postoperative exhaust time was earlier in the TAP-DV and TAP-DVA groups than in the control group ($P < 0.05$) and was earlier in the TAP-DVA group than in the TAP group ($P < 0.05$). The postoperative hospitalization days and total cost were significantly lower in the TAP-DV and TAP-DVA groups than in the control group ($P < 0.05$).

TAP-DVA has a stable and good analgesic effect and can promote rapid recovery after laparoscopic cholecystectomy [1)]

The study presents compelling evidence for the efficacy of TAP-DVA in improving postoperative outcomes in laparoscopic cholecystectomy. However, limitations such as the small sample size, lack of blinding, and single-center design suggest caution in interpreting the results. Future research addressing these gaps is necessary to establish TAP-DVA as a standard postoperative analgesic technique.

1)
Fu XY, Huang H, Zhu L, Zhou TH, Qi XG, Xu SS, Zhou R, Jin HM, Ni ZK. Effects of combined transversus abdominis plane block under direct vision and acupoint injection on promoting rapid recovery after laparoscopic cholecystectomy. Langenbecks Arch Surg. 2025 Jan 18;410(1):42. doi: 10.1007/s00423-025-03608-9. PMID: 39825913.