Postoperative pain and morphine consumption after ultrasound-guided femoral and sciatic combined nerve block versus neurostimulation for femoral and sciatic combined nerve block or neurostimulation for femoral nerve block in primary elective total knee arthroplasty.

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Background and Aims:
Total knee arthroplasty injuries are extremely painful and merit prompt attention to adequate postoperative analgesia. We aim to compare femoral and sciatic ultrasound-guided combined nerve block vs. neurostimulation for femoral and sciatic combined nerve block or for femoral nerve block in postoperative pain in primary elective total knee prosthesis.

Summary of work and outcomes:
A three arms, prospective longitudinal study of patients having primary elective unilateral knee prosthesis and randomly assigned to catheter insertion guided by ultrasound or neurostimulation was done: 1) Ultrasound-guided femoral and sciatic combined nerve block (USFSCN) (N=15); 2) Neurostimulation for femoral and sciatic combined nerve block (NSFSCN) (N=17); 3) Neurostimulation for femoral nerve block (NSFN) (N=11). Total analgesia (morphine) consumption after 48 hours was the primary endpoint. The postoperative pain intensity (visual analogue pain scale (VAS)) at post-anaesthetic recovery unit (PARU), 6, 24, 48 h, and during movement and postoperative complications were secondary outcomes.

Results and discussion:
43 patients (68.3±8 years old, 77% female) subjected to elective unilateral knee prosthesis were enrolled. There were no differences in the demographic, anaesthetic and surgical variables between groups. Pain intensity was lower in the USFSCN group compared with NSFSCN and NSFN during the first 48 h post-surgery (% of intense pain at PARU/6h/24h/48h): USFSCN 0.8/1.4/3.2/1.6; NSFSCN 5.6/8.3/7.5/3; NSFN 7.2/5.3/6.4/5.4. The average consumption of morphine within 48 h after surgery was similar in the groups USFSCN and NSFSCN (3 mg vs. 3.11 mg), and significantly lower than NSFN (4.19 mg) ($p<0.05$). And the number of complications was significantly lower in the USFSCN group compared with NSFSCN and NSFN during the first 48 h of postoperative.

Conclusion:
Ultrasound-guided femoral and sciatic combined nerve block presented better analgesia and was more safety than neurostimulation for femoral and sciatic combined nerve block or for femoral nerve block in primary elective total knee arthroplasty.

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