

## CORRESPONDENCE

## ANESTHESIA COMPLICATIONS

## Breakage of the spinal needle during spinal anesthesia

Muhammad Saleh Khaskheli<sup>1</sup>, Rafia Tabassum<sup>2</sup>

**Author affiliations:**

1. Professor and Chairman, Department of Anesthesiology, SICU and Pain Center, Peoples University of Medical & Health Sciences for Women, Nawabshah, Shaheed Benazirabad, Pakistan; E-mail: [beesaleh@hotmail.com](mailto:beesaleh@hotmail.com)
2. Chairperson Department of Anesthesiology, SICU and Pain Center, People's University of Medical and Health Sciences For Women, Shaheed Benazirabad, Pakistan; E-mail: [rafiatabassum2013@gmail.com](mailto:rafiatabassum2013@gmail.com)

**Correspondence:** Dr. Muhammad Saleh Khaskheli, E-mail: [beesaleh@hotmail.com](mailto:beesaleh@hotmail.com); Phone: +92 300 3211417

**ABSTRACT**

Spinal anesthesia still a very common method of anesthesia for surgery on the torso below the neck; but it is known to be associated with some setbacks / complications, e.g., failed spinal, spinal hypotension, patch effect with missed dermatomes, post-spinal headache etc. The author presents a rare occurrence of spinal needle being broken during the procedure, and the distal part being removed by surgical exploration.

**Keywords:** Anesthesia complication; Spinal anesthesia; Quincke spinal needle

**Citation:** Khaskheli MS. Breakage of the spinal needle during spinal anesthesia (Correspondence). *Anaesth. pain intensive care* 2024;28(2):397–398; DOI: [10.35975/apic.v28i2.2415](https://doi.org/10.35975/apic.v28i2.2415)

**Received:** December 28, 2023; **Accepted:** March 04, 2024

A 56 years old overweight lady, known diabetic and hypertensive, was planned for abdominal hysterectomy. She was optimized with oral hypoglycemic drugs and anti-hypertensive agents (angiotensin converting enzyme inhibitors and beta blockers). Her labs were within normal limits except HbA1c, which was 9%.

The patient consented for surgery under subarachnoid block. She was placed in sitting position and L4-L5 inter space was identified, skin and subcutaneous tissue infiltrated with 2% xylocaine local. A 27G Quincke spinal needle was introduced from paramedian approach, after 4 cm needle tip encountered bone and shaft bended a bit from mid. Needle was redirected and after removal of stylet free flow of cerebrospinal fluid (CSF) appeared; 0.5% heavy bupivacaine 15 mg was injected.

During removal of the needle the patient had a sudden jerky movement, that ended up in fracture of the needle, evident by half of the needle withdrawn, the remaining portion remained buried in the tissues. The situation was explained to the surgeon and he decided to remove needle prior to the planned hysterectomy.

The breakage of the needle during spinal anesthesia is a very rare complication to occur. One of the main causes of the needle breakage during insertion of needle is inadequate use of the introducer.<sup>1</sup> Emergency situations or the patients having high BMI are the other possible causes of needle breakage.<sup>2</sup> Excessive insertion, after multiple unsuccessful attempts, also contributes to the needle breakage. Post-insertion needle deflection without introducer may also result in needle breakage.<sup>3</sup> The type and size of the needle is also a factor. Patient position also contributes towards successful or unsuccessful insertion of needle. During the anesthesia, uncooperative movement of patient also contribute to the unwanted event.<sup>4</sup>

The migration of broken fragment of the needle results in infection of the surrounding areas/tissues. If the needle is in close proximity to the spinal canal, then there is a possibility of the neurological complications. Neural damage, leakage of CSF, numbness, weakness, infection are all possible complications of needle breakage during spinal anesthesia.<sup>3</sup>

Lower the number of puncture attempts, lower is the risk of nerve damage. This in turn can be done through ultrasound recognition.<sup>5,6</sup>

The movement of patient should be minimized by straightening of lower limb, thus needle would be



**Figure 1:** 27G Quincke spinal needle with its broken fragment that was buried in the spine and removed surgically.

extracted with ease and no rotation is needed in this case.<sup>4</sup>

To facilitate intrathecal puncture and to avoid in situ fracture of the spinal needle, consider using an atraumatic, larger than 27G, pencil point spinal needle when spinal puncture is expected to be difficult.

Replace the spinal needle with a new one if the process is judged to be challenging and requires additional attempts.

A multidisciplinary team should immediately arrange to remove a spinal needle that has fractured in place, and the anesthetic procedure should be chosen after taking patient-specific risk factors into account.<sup>7</sup>

The situation was informed to the patient and her attendant as well, and the surgeon decided to remove fractured part of the needle. The patient was placed in right lateral position. After aseptic measures, local anesthetic applied, incision given and after 10 min of the effort the surgeon identified and removed completely the buried portion of the needle. Due to unilateral and partial spinal block, hysterectomy was done under general anesthesia. The recovered patient was shifted to high dependency unit for monitoring, and discharged home on 2nd postoperative day.

#### Ethical issues

No ethical issues were involved; consent of the patient was acquired.

#### Author contribution

MSK is the sole author, who conducted the procedure and prepared this manuscript.

## REFERENCES

1. Kaboré RAF, Traore IA, Traore SIS, Bougouma CTHW, Augustin P, Ouro-Bang'na Maman AF. Broken needle during spinal anesthesia: an avoidable complication. *Local Reg Anesth.* 2018 Nov 23;11:111-113. PMID: [30538540](#), PMCID: [PMC6260186](#), DOI: [10.2147/LRA.S175547](#)
2. Greenway MW, Vickers R. Broken micro-tip spinal needle. *Int J Obstet Anesth.* 2009 Jul;18(3):295-6. PMID: [19457652](#) DOI: [10.1016/j.ijoa.2009.03.002](#)
3. Alsharif TH, Alanazi AT, Deif A, Abouelenein H. Successful Management of a Broken Spinal Needle During Difficult Spinal Anesthesia: A Case Report. *Cureus.* 2023 May 10;15(5):e38822. PMID: [37303359](#), PMCID: [PMC10251730](#), DOI: [10.7759/cureus.38822](#)
4. Utariani A, Abbas AK, Lalita A, Godrace J, Sunarso S (2019) Broken Needle during Spinal Anesthesia: How Can It Happen and How to Take It?. *J Anesth Clin Res* 10: 1000882.
5. Carvalho JC. Ultrasound-facilitated epidurals and spinals in obstetrics. *Anesthesiol Clin.* 2008 Mar;26(1):145-58, vii-viii. PMID: [18319185](#) DOI: [10.1016/j.anclin.2007.11.007](#)
6. Sahin T, Balaban O, Sahin L, Solak M, Toker K. A randomized controlled trial of preinsertion ultrasound guidance for spinal anaesthesia in pregnancy: outcomes among obese and lean parturients: ultrasound for spinal anesthesia in pregnancy. *J Anesth.* 2014 Jun;28(3):413-9. PMID: [24141882](#) DOI: [10.1007/s00540-013-1726-1](#)
7. Moll A, Filippini G. Broken spinal needle. Tutorial 378. *World Fed Societies Anaesthesiol.* Published online 1st May 2018. [[internet](#)]