

## CASE REPORT

# Anesthesia and psoriatic arthropathy: Challenges and literature review

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## ABSTRACT

Psoriatic arthropathy (PA) can present with significant challenges to the perioperative physician due to consequences of difficult airway, distorted anatomy for regional anesthesia, respiratory and skin complications and the side effects with the medications used to control the disease activity. Awake fiberoptic intubation is the safest option in these patients with a potentially difficult airway if regional anesthesia is failed. Nerve block could be an attractive option for pain relief in lower limb surgery. Here we describe a case of psoriatic arthropathy with difficult airway, successfully managed after failed regional anesthesia. We describe the anesthetic challenges and management in a patient with psoriasis.

**Key words:** Psoriasis; Psoriatic, Arthritis; Anesthesia; Anesthesia, Regional; Anesthesia, General

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## INTRODUCTION

Psoriasis is an inflammatory skin disease characterized by epidermal hyperplasia with silver colored scaly skin lesions. It can lead to seronegative arthritis commonly known as psoriatic arthritis (PsA) usually affecting distal interphalangeal joints of the fingers, spine and sacroiliac joints but rarely affects hip and temporomandibular joints.<sup>1</sup> Prevalence of PsA among the psoriatic skin disease is about 5-30%.<sup>2</sup> We present a case of severe PsA with bilateral hip and temporomandibular joints ankylosis complicating regional anesthesia as well as general anesthesia for surgery for total hip replacement (THR). Written informed consent was obtained from the patient to present his case report and the pictures.

## CASE REPORT

A 28 years old male had been suffering from some skin lesion for 3 years, which was diagnosed clinically as plaque psoriasis (Figure 1) in the dermatological clinic. He was treated with tazarotene cream, topical calcipotriene and coconut oil local application. For the last one year he had complaints of back pain



Figure 1: Patient presented with plaque psoriasis in leg

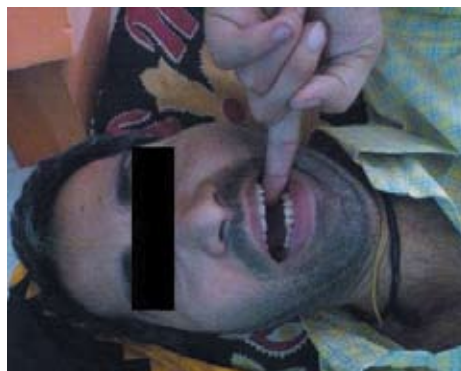


Figure 2: Limited mouth opening due to temporomandibular joints ankylosis



Figure 3: X-ray of temporomandibular joints showing narrowing of joint space

and difficulty in walking which progressed in such a way that he had lost his ability to walk without support. Orthopedic consultation revealed bilateral hip arthritis with ankylosis.

Initial treatment started with oral methotrexate 25 mg/week and prednisolone 40 mg daily for 2 months. He was bed ridden for last one month with inability to flex his hips. Hence, bilateral THR was planned. Pre-anesthetic examination and investigations demonstrated mouth opening limited to one finger (Figure 2) with involvement of temporomandibular joints (Figure 3) with congested inter-spinous space.

Nasal passage patency was confirmed clinically. Blood investigations showed mild anemia with normal liver function test. Chest x-ray and ECG were normal. Pulmonary function tests demonstrated mild restrictive pattern lung parenchyma. We planned combined spinal-epidural (CSE) technique for the planned surgery. We were mentally prepared to shift to general anesthesia (GA) despite a known difficult airway, in anticipation of a difficulty in regional anesthesia. Basic monitors were attached in the operating room. The patient was placed in a lateral decubitus position in view of his inability to sit due to bilateral restricted mobility of hip joints. We were unable to appreciate adequate interspinous space due to inadequate flexion and straightening of vertebral column. This improper positioning along with narrow interspinous space

made CSE difficult. The use of ultrasound also failed to help. Both median and paramedian approaches failed to locate the subarachnoid space. An attempt to discern out the anatomy required for lumbar plexus block also failed so we moved on to GA. The patient had already been explained and counseled regarding the need for awake flexible fiberoptic bronchoscopy (FOB) guided intubation. We prepared him with lignocaine 4% 4 ml nebulization for 10 min and nasal packing with 4% lignocaine soaked gauze. In OR bilateral superior laryngeal nerve block was done with 1% lignocaine 1-2 ml each side. Intratracheal injection of 2 ml of lignocaine 2% was given. Dexmedetomidine infusion was started at  $1\mu\text{g}/\text{kg}$  for 10 min followed by  $0.2\text{--}0.7\mu\text{g}/\text{kg}/\text{hr}$  after glycopylorate premedication. Trachea was secured with size 7 mm internal diameter endotracheal tube through flexible FOB via nasal route. Anesthesia was maintained with oxygen - air with propofol infusion and intermittent injection of vecuronium. Difficult airway cart was ready in OR for intubation as well as at extubation. Intraarterial blood pressure monitoring was established in view of anticipated major blood loss in bilateral THR. We secured two large bore peripheral cannulae in the upper limbs. For postoperative pain relief bilateral femoral nerve blocks were done with bupivacaine 0.25% plus clonidine  $75\mu\text{g}$  in 30 ml preparation injecting 15 ml in each side under ultrasound guidance (Figure 4). Bilateral THR was uneventful with approximately 800 ml blood loss. One unit of packed red cells was transfused in intraoperative period. We were able to extubate him in fully awake state with airway exchange catheter in situ. Satisfactory postoperative analgesia was achieved with additional paracetamol infusion.

## DISCUSSION

In PsA, joints replacement may be required to improve functions and the quality of life. A detailed pre-operative evaluation is essential to know about the severity of the disease, airway involvement, local anatomy for regional anesthesia and extra-articular manifestations of the disease. The range of motion of major joints is important to plan optimal positioning of the patient during anesthetic technique and perioperative period. Pre-operative investigations depend on the severity of the disease and these include echocardiography, lung function tests, chest x-ray and sometimes arterial blood gas analysis. Metabolic syndrome is common in Asian Indian population with PsA with active joint disease.<sup>3</sup> Newer biological

molecules like efalizumab, alefacept, etanercept and infliximab are now frequently used for disease modification. Perioperative use of  $\alpha$ -TNF agents is controversial. Branten AJW demonstrated a significant chance of infectious complications after orthopedic surgery in patients treated with  $\alpha$ -TNF agents.<sup>4</sup> But perioperative continuation of  $\alpha$ -TNF agents doesn't cause significant surgical wound infections.<sup>5</sup> Eosinophilia and allergic reaction have also been reported with this biological agents in PsA.<sup>6</sup> Stress-dose corticosteroid is usually required during the perioperative period in patient on chronic corticosteroid therapy. Renal and liver function tests are important in a patient on methotrexate therapy. High incidence of pruritus with neuraxial opioids can aggravate the psoriatic disease.<sup>7</sup> Trauma to the skin initiates skin lesions. So it should be avoided at any cost and skin should be adequately protected during the perioperative period. Intravenous catheters should be fixed and covered appropriately. Psoriatic skin lesions are commonly associated with *S. aureus*, hence regional anesthesia or intravenous cannula should not be applied at these sites to prevent septicemia. It is better to avoid use of nitrous oxide in a patient on long term methotrexate. Skin scales or plaques may cause difficulty in placing ECG electrodes. Pre-operative indirect laryngoscopy is a good option in anticipated difficult airway patient. Awake fibreoptic intubation is the safest option

when indirect laryngoscopic view suggests non-visualisation of larynx. A modified awake fibreoptic nasal intubation through a split nasopharyngeal airway has been reported in ankylosing spondylitis (AS).<sup>8</sup> Laryngeal mask airway use is possible in patients with a mouth opening  $>1.2$  cm.<sup>9</sup> RA is technically difficult and associated with increased risk of complications. Trachea is successfully intubated using the Airtraq<sup>(®)</sup> laryngoscope in AS.<sup>10</sup> Spinal anesthesia using a lateral approach has been considered as an alternative when GA is difficult.<sup>11</sup> Positioning difficulty due to bilateral hip joints

ankylosis is rare and its being a reason to failure of RA has never been reported in the literature like our case. Postoperative pain management after lower limb surgery with different nerve blocks under ultrasound is a good option in a case of failed central neuraxial anesthesia, because of its effects on analgesia as well as deep vein thrombosis.<sup>12</sup>

In conclusions, PsA patients with airway and axial skeleton involvement, requiring anesthesia, should undergo appropriate preoperative evaluation and planning. Awake and under vision intubation ensures safe airway management. Alternative anesthesia plans should always be ready beforehand. Regional peripheral nerve blocks with ultrasound guidance are a good option in such patients.

**Conflict of interest:** None declared by the authors

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