

Anaesthetic Management of a Patient with Syringomyelia for Modified Radical Mastectomy and a Review of Literature

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Introduction

Syringomyelia is a neurological condition in which a cavity develops in the spinal canal (syrinx). It may be a cause for the development of Arnold Chiari malformation Type 1 in which there is herniation of the cerebellar tonsils. It has a prevalence of 8.4 per 100,000 and occurs more frequently in men than women in the third or fourth decade of life. Rarely, it may develop in childhood or late adulthood. Here we report the anesthetic management of a patient who presented with syringomyelia scheduled to undergo a modified radical mastectomy.

Keywords: Syringomyelia; Arnold Chiari malformation; Anaesthetic management;

Case Report

A 78 year old female weighing 56 kg presented with carcinoma of the breast and was scheduled for modified radical mastectomy. On preanaesthetic evaluation she was found to be a hypertensive and diabetic. She had undergone a thyroidectomy surgery 2 years back and was on thyroid medications. She also complained of weakness on both upper limbs for last 10 years. On neurological evaluation she was diagnosed to have syrinx at C2-T1 levels on MRI scan. She had grade 3-4 power on both upper limbs. There was no other associated neurological dysfunction like slurred speech, swallowing difficulty or loss of temperature or pain sensation on face, chest or upper limbs. She was detected to have lower motor neuron weakness of upper limb with wasting. Her blood investigations were normal. Other consultations done included a cardiac consultation and a pulmonology evaluation. Her Pulmonary function test was normal. Her room air saturation was 98%. Her ECHO findings were normal. Airway examination was normal.

The patient was premedicated with Alprazolam 0.25mg on the night before the surgery. She also received her routine antihypertensive medication on the day of the surgery. Blood sugar was controlled with Insulin. She received Pantoprazole 40mg on the morning of surgery. Routine monitors were connected. An intra-arterial line was used to monitor her blood pressure (invasive monitoring) BIS monitoring was used intraoperatively. She received Midazolam 1mg and Fentanyl citrate

80mcg as premedication. As she did not have any features of raised intracranial tension she was intubated using IGel (4size) after receiving Intravenous Propofol (80mg) and Atracurium (15mg). Surgery lasted for 90 minutes. Procedure was uneventful and patient was extubated (after checking Train of four response at the conclusion of the surgery) using neostigmine 2.5mg and glycopyrrolate 0.4mg. She received Paracetamol IV postoperatively for pain and fentanyl boluses as rescue analgesic. She was discharged after 2 days.

Discussion

Syringomyelia is an unusual condition which may be associated with Arnold Chiari malformation in which there is a cavity within the spinal cord. It has a prevalence of 8.4 per 100,000 and is more common in males [1]. It may develop in childhood or late adult age group rarely. It poses significant challenge to the anaesthetist. In a classic case of syringomyelia, patient shows asymmetric loss of pain and temperature sensation in the upper limb (lateral spinothalamic tract), lower motor neuron signs in the hands (anterior horn cells), and upper motor neuron signs in the lower limbs (corticospinal tracts). Advanced disease is usually characterized by presence of posterior column signs. Trophic changes may be striking particularly with gross osteoarthropathy (Charcot's joints) development. Autonomic neuropathy can be there in a coexisting syringomyelia [2].

The patient may be symptomatic if there is neural compression when they will have signs of raised intracranial pressure. They can present with difficult airway due to the bony abnormalities in the cervical spine. They require careful intubation with cervical stabilization. They may pose difficulties with positioning. They may have altered response to nondepolarising muscle relaxants [1,2]. They may also have fluctuating blood pressure due to autonomic dysfunction. The patients who are symptomatic may require decompression craniectomy [1].

In our patient we had used the supraglottic device for intubation which is considered as an adjunct in the difficult airway algorithm. IGel has been found to be associated with less gastric insufflation and hence chance of aspiration [3,4]. Studies in obstetric patients have demonstrated the use of epidural analgesia in these patients with few complications [5]. Reports of parturients developing respiratory complications in the postoperative period have also been reported [5,6].

Conclusion

The patients with syringomyelia require careful preoperative workup including proper neurological evaluation, careful anesthetic planning and intraoperative vigilance and anticipation of probable complications to improve outcome.

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