

Anaesthetic Management of a Patient with poor Cardiac Reserve, Posted for Intrasacroal Surgery using Spermatic Cord Block.

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Abstract

Neuraxial block though most rampently employed anaesthetic procedure has a number of physiological sequel. These physiological changes may be more significant in patients with poor cardiac reserve. We present the anaesthetic management of patient with poor cardiac reserve posted for intrasacroal surgery.

Keywords: Intrasacroal surgery, spermatic cord block, poor cardiac reserve.

Introduction:

In 2000 Rodgers and colleagues published an extensive meta-analysis showing reduction in post operative mortality & morbidity with neuraxial anaesthesia. Peripheral nerve blocks & local anaesthesia have very few cardiovascular / pulmonary side effects¹. Regional anaesthesia in the form of single shot major conduction block has been advocated as ideal anesthesia for ambulatory surgery². Regional anaesthesia would provide excellent post-operative analgesia & thus reduce the need for opioids & risk of nausea². We describe the anaesthetic management of a 65 year old male with post CABG status & hydrocele posted for sac excision.

Case Report:

Patient aged 65 year was posted for hydrocele sac excision. Known case of Ischemic heart disease(IHD) & hypertension. He gave history of CABG 4 years back.

Anaesthetic Management of Case: Started from pre-operative evaluation. The patient was on following medication T. Atrovastatin 10mg, T. Clopidogrel 150mg, T. Aspirin 75mg & T. Metoprolol 25mg.

Patient was thoroughly evaluated with basic (CBC, RFT, LFT) and cardiac (ECG, ECHO) evaluation. Investigation revealed Hb 13.2g%, platelet of 1.63 lac, Differential WBC count was normal, RFT, LFT & Serum electrolytes were normal. Cardiologist opinion was sought. ECG showed T? avL, v5- v6.

ECHO: IHD, RWMA (regional wall motion abnormality) + moderate LV dysfunction, LVEF (left ventricle ejection fraction) 35% trivial MR (mitral regurgitation), no PAH (pulmonary artery hypertension).

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Following advice were given:

To continue antihypertensive drugs & to withhold anticoagulation drugs for 7 days prior to surgery.

Patient preanaesthetic evaluation was done keeping in mind with above investigation and instructions. Patient and patient's attenders were counselled. On the night prior of surgery T. Alprazolam 0.25 mg & T. Pantoprazole 40 mg was advised.

It was decided to proceed with regional anaesthesia in the form of spermatic cord block since both neuraxial and general anaesthesia (GA) were relatively contraindicated. On the day of surgery, patient was shifted to operation theatre, monitors were connected (ECG, NIBP, Pulse oximetry) base line readings were recorded. 18G cannula was inserted into vein on dorsum of left hand and was started on Ringers Lactate.

Patient was positioned for spermatic cord block (supine), area was painted and draped.

Technique of spermatic cord block:

Spermatic cord was palpated 1cm below and medial to pubic tubercle (felt as cord like structure between thumb and index finger) local anaesthetic (containing 1% lignocaine with 0.25% bupivacaine) was taken in 10 ml syringe with 26 G hypodermic needle.

The needle was advanced into the spermatic cord which was stabilized between thumb & index finger of non-dominant hand. Upon entry the syringe was aspirated to rule out any intravascular placement of needle.

On negative aspiration local anaesthetic was injected into the cord structure which was confirmed by sense of enlargement of spermatic cord structure between the thumb and index finger.

To ensure adequate block 2-3 passes were made in the cord at slightly different angles, injecting 3-4 ml each time.

After about 10-15 min adequate block was achieved.

Further the skin and subcutaneous tissue at the site of incision was infiltrated.

Discussion:

Intrasrotal procedures under regional block (spermatic cord) can be used in patients where neuraxial block / GA are unsuitable as in our case : patient with low cardiac reserves, thus overcoming the complication that may occur during neuraxial block / GA)

The genital branch of genitofemoral nerve & terminal branch of ilioingunial nerve innervate together the sensory part of scrotal content. After emergence through external ring of inguinal canal both nerves are found inside spermatic cord either on top / under cremastic fascia³. At their emergence they are readily available for spermatic cord block.

The skin and subcutaneous tissue at site of incision are infiltrated. This is necessary because scrotal skin receives sensory fibres from pudendal nerve & perineal branch of posterior cutaneous nerve of thigh.

Conclusion:

Spermatic cord block is a simple, safe and effective technique which can be practiced for intrascrotal surgery particularly in patient considered unfit for neuraxial / G.A.

References:

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One-Way Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) is a hypothesis-testing technique used to test the equality of two or more population (or treatment) means by examining the variances of samples that are taken. ANOVA allows one to determine whether the differences between the samples are simply due to random error (sampling errors) or whether there are systematic treatment effects that causes the mean in one group to differ from the mean in another. Most of the time ANOVA is used to compare the equality of three or more means. ANOVA is based on comparing the variance (or variation) between the data samples to variation within each particular sample. If the between variation is much larger than the within variation, the means of different samples will not be equal. If the between and within variations are approximately the same size, then there will be no significant difference between sample means.

Assumptions of ANOVA:

- (i) All populations involved follow a normal distribution.
- (ii) All populations have the same variance (or standard deviation).
- (iii) The samples are randomly selected and independent of one another.