Intravenous Diazepam and Pentazocine with Local Anaesthesia as a Substitute For General/Spinal Anaesthesia In Surgery of Inguinal Hernia and Hydroceles

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Summary

A total of sixty two cases (forty three with inguinal herniae and nineteen with hydroceles) were operated using intravenous Diazepam and Pentazocine, combined with Local Anaesthesia. The study showed effectiveness of the procedure, shorter stay in hospital, lower cost and fewer complications. Most importantly the procedure was found to be suitable for patients unfit for conventional anaesthesia.

Local Anaesthesia has been used for many years in surgical practice, but the study was done to combine local anaesthesia with agents having analgesia, sedative as well as muscle relaxant properties.

Material and Methods

The ages of the sixty two patients varied between fifty six and seventy eight years. Thus they were all elderly. Infants, children and young adults were excluded from the study (Table I). Also excluded were patients with very large herniae, obese individuals, patients with recurrent herniae, and those with diabetes and uncontrolled hypertension.

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TABLE-I

Disease	No. of Patients	Age
1. Inguinal Herniae	43	56 years - 78 years
2. Hydroceles	19	50 years - 75 years
Total	62	Average Age: 65 years

All patients were admitted one day before surgery. Routine examinations e.g., blood indices, urine analysis, chest X-rays and E.C.G. were done on each patient.

The night preceding surgery each patient received 5 mgm of Diazepam orally as night sedation.

In the operation theatre the patient received Diazepam 10 mgm and Pentazocine 30 mgm by intravenous route after setting up an intravenous infusion line. An infusion of 5% Dextrose in normal saline was started slowly to counteract any hypotensive episode due to Diazepam.

After preparing and draping the patient, the area of operation was infiltrated with 2% Plain Lignocaine using about 30 - 40 mls.

It was found that the majority of the patients were reasonably calm and sedated for the operation to proceed smoothly. Out of a total of sixty five patients only three patients were found to be unsettled and had to receive general anaesthesia. These three were excluded from the study.

Discussion

History of Local Anaesthesia: Cocaine was the first local anaesthetic agent isolated in 1860 from Erythronylum coca leaves[1]. Karl Koller was the first to introduce Cocaine as a local anaesthetic agent for eyes at an Opthalmic Congress in 1984[2]. Thereafter the field of Local Anaesthesia expanded quickly to include infiltration nerve block and spinal anaesthesia.

Because of its high toxicity and addictive properties a search for less toxic synthetic substitutes commenced.

In 1905 Procaine was introduced by Einborn[2]. This was, however, found to be unreliable and of short duration of action. The next major advance was the production of Cincochaine in Germany[3] in 1920. A few years later a most important milestone was reached when Lignocaine was discovered in 1943 by Lofgren of A.B. Astra in Sweden[3,4]. It was introduced in clinical practice in 1948 and has been popular since then. It has moderate potency and duration, rapid onset of action and good penetration power[1,2,3,4].

Diazepam: (7 - Chloro-1,3 Dihydro-1-Methyle 5 Phenyle-2H-1,4 Denzo Diazepin-2-1).

It is a general cerebral depressant, produces amnesia, sleep or anaesthesia according to the dose. It depresses motor neuron activity in the spinal cord and has thus useful effect on muscle spasm. In smaller doses it does not depress medullary, respiratory or vaso-motor centres (C.V.S. depression). Its main advantage is its use (0.1 - 0.25 mg/kg) to sedate patients undergoing brief but unpleasant or painful procedures and in this context production of amnesia is its prominent and useful effect[5,6].

Pentazocine (Fortral or Sosegon): (1,2,3,4,5,6-Hexahydro-cis- 6,11-Dimethyl-3-(3-,ethyl-2 Butenyl)-2,6-Methane-3-Benzo-cin 8-ol).

It is a useful analgesic, is less addictive and has brief duration of action[7,8,9].

The triple combination of Diazepam, Pentazocine and Local Anaesthesia in the form of 2% Plain Lignocaine was used in sixty two patients with inguinal herniae and hydroceles. In an under- developed country like Pakistan, and particularly its lesser developed Province of N.W.F.P., this combination was found to be highly effective, cheap and almost without complications. As the study was conducted in elderly people, the problem of urinary retention was almost non-existent. Chest and C.V.S. complications, deep venous thrombosis etc. were also not encountered.

Conclusion

We in the N.W.F.P. lack the facilities of highly skilled anaesthetic personnel, shortage of funds and the back up support of efficient nursing and axillary staff. An effective method for dealing with herniae and hydroceles in the elderly has been described without general or spinal anaesthesia. It is considered reasonably easy and safe. We, therefore, recommend its wider application in such suitable cases.

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