

Conflicts of interest

The authors have none to declare.

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Morphometric study of suprascapular notch in Indian dry scapulae with specific reference to the incidence of completely ossified superior transverse scapular ligament



Madala Venkateswara Rao*, Lattupalli Hema

Narayana Medical College, Nellore, Andhra Pradesh, India

Background: The suprascapular notch, a depression on the lateral part of the superior border of the scapula, medial to the coracoid process, is bridged by the superior transverse scapular ligament, which is sometimes ossified and the foramen, which is thus completed, transmits the suprascapular nerve to the supraspinatus fossa. Variations in the morphology of suprascapular notch have been identified as one of the causes of suprascapular nerve entrapment. Rengachary et al. classified this notch into six types, based on its shape.

Aim of study: To study morphological variations of suprascapular notch in Indian dry scapulae and to analyze the incidence of completely ossified superior transverse scapular ligament with other ethnic populations which have been cited earlier.

Materials and methods: A total of 100 human dry scapulae which were obtained from the Department of Anatomy, Narayana Medical College, Nellore. The type of suprascapular notch was noted and it was recorded as per the description given by Rengachary et al. The results of the present study were compared with the results of previous authors in different populations.

Results: In our study, out of 100 scapulae, 40 (10%), were identified to have completely ossified superior transverse scapular ligaments. The frequencies of various types of suprascapular notches were: Type I – 19%, Type II – 15%, Type III – 30%, Type IV – 13%, Type V – 20%, Type VI – 10%.

Conclusion: The growing importance of such variations of suprascapular notch are useful for the surgeons, orthopedicians and anatomists to arrive at the correct diagnosis and do the necessary treatment.

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Expression of neuropeptide Y in dorsal root ganglia following hind paw incision in rats



Anshu Bahl*, Shivani Gupta, S.B. Ray, Saroj Kaler

AIIMS, New Delhi, India

Background: Neuropeptide Y (NPY) is widely distributed in the mammalian nervous system. NPY has established role in circadian rhythm, blood pressure, appetite, obesity and memory. The aim was to investigate NPY expression in dorsal root ganglion during pain. The hind paw incision model in rats mimics postoperative pain in humans.

Methods: Sprague-Dawley rats ($n=24$) were randomly divided into 2 groups – control ($n=6$) and incision ($n=18$) groups. Behavioural test for nociception was done under basal condition and after surgical incision in right hindpaw at different time periods (day 1, 3 and 5) using Hargreaves test. The procedure of incision has been previously reported. The rats were perfused with 4% paraformaldehyde followed by removal of dorsal root ganglia at L4 level. The tissue was processed for immunohistochemical localisation for NPY.

Results: Postincisional groups (day 1, day 3 and day 5) exhibited significant decrease of paw withdrawal latency in comparison to control rats. The NPY expression was mainly noted in the small-sized dorsal root ganglion neurons. Some neurons showed intense staining particularly, on day 5.

Conclusion: Decreased latency indicated nociception, particularly on day 1. Compared to control, expression of NPY was decreased on day 1. This could be correlated with increased axoplasmic flow towards the spinal cord. On day 5, NPY expression was highest in DRG. This could be due to decreased transfer towards the spinal cord from the site of synthesis.

Conflicts of interest

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Effect of metformin on testicular histology of adult male offspring



Priya J. Martis*, Sneha Guruprasard, Guruprasad Kalthur, Anthony Sylvan Dsouza

Kasturba Medical College, Manipal University, Manipal, India

Introduction: Metformin is an oral anti-diabetic drug, primarily used for treating polycystic ovary syndrome (PCOS) which is a very common cause of female infertility. In addition, it is also used in treatment of type 2 diabetes mellitus. As it benefits by improving insulin resistance of tissues it is also widely used in gestational diabetes. Treatment is given throughout the pregnancy to reduce the complications such as pregnancy loss. Metformin administered during pregnancy crosses the placental barrier and also reduces the sex hormone binding globulin (SHBG) level and alters the Leydig cell functions which ultimately affect the testicular development in male offspring.

Aim: To study the histological changes occurring in the male gonads following maternal exposure to metformin.

Materials and methods: The adult Swiss albino mice were administered with 50, 100 and 200 mg/kg body weight (intraperitoneally), every day for 4 weeks. After the completion of the treatment, the female mice were mated with healthy fertile males and the litters born were monitored till they attained 8 weeks. Testes were collected and processed for histological study by taking 5 μ m thick sections and stained with Haematoxylin & Eosin.

Results: A significant reduction in the number of spermatogonial cells, reduced diameter of seminiferous tubules and increased number of tubules with incomplete spermatogenesis was observed in offspring born to females treated with 200 mg/kg metformin. The data also supports the epididymal sperm parameters.

Conclusion: The result indicates that administration of metformin at higher doses can have detrimental effect on male gonadogenesis.