

## ANATOMO-TOPOGRAPHIC INVESTIGATIONS ON THE ANTERIOR HEPATIC NERVE PLEXUS

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In recent years considerable attention has been focused on the anatomy of the anterior hepatic nerve plexus (AHNP) since the latter has become the site of operation in treatment of chronic interstitial hepatitis.

Arianoff (5) identifies three distinct parts of the AHNP: one plexiform with length of the nerve fibers reaching up to 1 cm, a second one — chord-like with length of the fibers ranging from 1—2 cm and a third one — juxta-arterial, with length of the fibers up to several centimeters.

The investigations on the AHNP structure, carried out by the author with standard dissection techniques, lended support up to a certain extent to the findings reported by Arianoff. The dissection method appeared to be the most adequate in studying the juxta-arterial portion of the plexus. The nerve trunks of the juxta-arterial part displayed orientation towards the extrahepatic tract of the biliary system, pancreas and the other nearby situated organs. The nerve supplying the Oddi's sphincter innervation, described by Reich (6), was traced up in the juxtaarterial part. According to Schafircff (7), it is found in 80% of the cases. It was furthermore established, that most frequently, the nerve originates from two pedicles along the anterior wall of the common hepatic artery (Fig. 1). The nerve thus created gradually goes away and beneath the artery, running a course to the right-side of the pancreas, between the gastroduodenal and right gastric artery (Fig. 2 — on the picture the nerve is black paper mounted for better contrast) and approximates the biliary tract just behind its pancreatic portion. In 23 or 92% of a total of 25 human cadavers investigated, the nerve just referred to was found well formed and overlying the anterior aspect of the common hepatic artery. Merely in two specimens the nerve was not developed and was represented by numerous, delicate, long fibers which failed to form a common (unique) nerve trunk.

Aiming the quantitative determination of nerve elements within the cord-like and plexiform portion of the anterior hepatic nerve plexus, a histochemical method was resorted to with staining total preparations of the same. Thus a more clearcut distinction of the nerve fibers from blood and lymphatic vessels and connective tissue was provided for. A similar procedure was not found in the literature references surveyed. The total preparations of the common hepatic artery together with the nerve plexus elements and the surrounding fatty tissue were obtained from fresh human cadavers. The preparations were abundantly washed up with water for 2—3 hours and cleansed with pincers and scalpel, the major part of fatty tissue being removed. The method described by M. T. Shubich and A. B. Hodos, slightly modified, was employed for the staining of the nerve plexus and clearing of the preparations. Initially, the preparations were left for



Fig. 1



Fig. 2

2—3 hours in 5% sulfosalicylic acid, and thereafter they were stained by immersion into Schiff's reagent for 24 hours. Next, they were consecutively placed into a jar containing sulfurated water and kept for 30 min, and in two more basins containing sulfurated water — for further 24 hours. The preparations were cleared in a mixture: one part glycerin and two parts sulfurated water for 24 hours, and in pure glycerin — for further 72 hours. Merely the nerve fibers remained purple tinged. Ten specimens in all were prepared in this manner and examination was performed with biocular lense. Nerve elements were not detected in stained plexiform part. The latter finding warrants the assumption that adventitial connective tissue elements predominate in its structure. The greatest number of stained nerve elements was established in the cord-like portion; they were situated longitudinally, in the same direction as the artery and running the same course. They penetrate the hepatic parenchyma together with the artery.

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#### ТОПОГРАФИЧЕСКО-АНАТОМИЧЕСКИЕ ИЗУЧЕНИЯ ПЕРЕДНЕГО ПЕЧЕНОЧНОГО-НЕРВНОГО СПЛЕТЕНИЯ

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#### РЕЗЮМЕ

Автор изготавливает тотальные, просветленные препараты из общей печеночной артерии, вместе с хордоподобной и плексиформенной частями переднего печеночного нервного сплетения и окрашивает гистохимически нервные волокна. Он находит, что в структуре плексиформенной части преобладают адвентициальные соединительнотканевые элементы, в то время как в хордоподобной — преобладают нервные волокна, которые следуют ход артерии и проникают в паренхиму печени.