

EPIDEMIC PAROTITIS AND LIVER

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The virus of epidemic parotitis, apart of salivary glands, sometimes affects various organs like testes, meninges and pancreas. Rather rarer clinical manifestations are also known of the said infection as prostatitis, mastitis, bartholinitis, oophoritis, thyreoiditis, thymitis, arthritis, myocarditis, dacryocystitis and hepatitis. In the basic text-books on infectious diseases, the problem for the relationship between parotitis infection and liver is either completely omitted or is referred to very briefly. In periodic literature sporadic reports are found in this respect from clinical and paraclinical aspect. This question, however, has an essential practical significance connected with the high morbidity rate of epidemic hepatitis noted lately and the logical importance ensuing isofar differential diagnosis of this condition is concerned. Diagnosis of the latter is rendered difficult, particularly in its mild and atypical forms, revealing points of contact with numerous other diseases. We cannot afford not confessing that for the time being, due to the lack of absolutely secure diagnostical tests, probably, under the label „epidemic (viral, infectious, Botkin) hepatitis“ affections are included with liver disorders of different infectious genesis: vira (mononucleosis, herpes (4, 10), adeno-(2), Coxsackie (4, 11), cytomegalia (13), canine hepatitis (4, 9), streptococci (1, 3), listeria, Rickettsia, Salmonella etc.).

Against the background just outlined, we set ourselves the task of investigating the incidence and degree of eventual hepatic lesions in some viral conditions as epidemic parotitis, grippe, adeno- and Coxsackie-infections, varicella, infectious mononucleosis etc.

Method of work

In the present paper the results are reported of observations on 87 patients with epidemic parotitis. Forty of them revealed clinical evidence for isolated parotitis, whereas in the remaining 47, in addition to manifestations on behalf of the salivary gland, data were present for additional localizations of the infection, namely: orchitis — 22 cases, serous meningitis — 21, orchitis and meningitis — 3 and pancreatitis — 1. The age distribution of the patients is the following: from 2 to 7 years — 18, from 7 to 14—17 and from 14 to 46—52. The total number underwent observations and investigations with a view to detecting eventual clinical (anamnesis, colour of skin, mucosa, feces and urine, size of liver) and paraclinical (biliary pigments in the urine, serral bilirubin, McLagan and Weltmann tests,

activity of SGPT and aldolase) „liver“ symptoms. In single cases supplementary studies were carried out: iron, copper and mucoproteins in the serum, bromsulphalein, hemagglutination inhibition test for epidemic parotitis etc.

Results

In 13 of the total 87 parotitis patients investigated the urobilinogen in the urine was increased once (at the first examination). The repeatedly carried out investigations (after 6—12 days) showed a normal result. The control performance of the same test in 100 patients with dysentery exhibited increased urobilinogenuria only in four of them. It is well known that in this condition primarily, due to disorders in intestinal mucosa permeability (5), very often the separation of urobilinogen via the urine is increased. In the 100 controls investigated, the same test gave normal result in the total number. In some of our patients with mumps the hyperurobilinogenuria couldn't be explained on extrahepatic ground and thereby, we are inclined to relate it with a slight hepatic lesion. Only in one of the total number of patients studied, bilirubin was found in the urine.

The thymol test performed in 83 patients disclosed values up to 40 Ph. U. in 72 cases and above 40 Ph. U. — 11 cases, namely: from 41 to 50 Ph. U. — 3 cases, 51 to 60 Ph.U.—6 cases and 71 to 80 Ph.U.—2 cases. The Weltmann test, carried out in 81 patients, revealed the following values: 4 test-tubes in 2 cases, 5—in 10 cases, 6 — in 38 cases, 7—in 20 cases, 7,5—in 6 cases and 8 — in 5 cases. The shortening of the coagulation band in parotitis is known (5). Nevertheless, it is worthwhile mentioning that in 11 of our series this band was lengthened. It could be assumed that in these cases, the processes contributing to the elongation of coagulation (hepatic disorders), have prevailed on those accounting for its shortening (exudative inflammation of glandular organs). The activity of the aldolase ferment was determined in 32 patients. In 26 of them it amounted to 8 units, and in 6 — above 8 AU (up to 17 AU). SGPT activity was within the limits of normal in 36 patients, and merely in one patient the result obtained reached 90 TE during the first examination. The serum bilirubin in all patients proved to be within the limits of the normal — up to 1 mg%.

Table 1

Number of patients investigated and results of the investigations (in %)

Urobilinogen in the urine									Thymol test		
epidem. parotitis			dysentery			healthy			cases studied	above 40 Ph. U.	beneath 40 Ph. U.
cases	increase	normal	cases	increase	normal	cases	increase	normal			
87	14.94	55.06	100	4	96	100	0	100	83	13.25	86.75

cases studied	Weltmann			Transaminase (SGPT)			Aldolase		
	coagulation band			cases	above 40 TE	under 40 TE	cases	above 8 A. U.	under 8 A. U.
	shorter	normal	longer						
87	14.81	85.19	13.58	37	2.70	97.30	32	18.75	81.25

Transitory icterus was established only in two patients. The inferior edge of the liver in the medioclavicular line was palpated above the costal arch in 8 patients, children up to 7 years, and 1 cm underneath — in 6 patients, three of the latter being adults.

No perceptible differences were found in the aspects we were interested in between the patients with pure parotitis and those with additional localizations of the pathological process.

In most of the cases, the deviations of the normal were of a nature and degree affording perception in laboratory alone. Typical in this respect was the patient N. S. T., 22-year-old, history of illness 1888/1964, who in addition to characteristic for parotitis and orchitis manifestations, did not exhibit anamnestic or clinical evidence whatsoever on behalf of the liver. In the same patient however, the thymol test showed growing values (50, 60 and 80 Ph.U.), Weltmann—7,5 t. t., bromsulphalein — 16%, serum iron — 165,8γ %. At the check examination a month later, these tests were completely normal. The twofold investigation on hemagglutination inhibition test for parotitis was positive with repeatedly increasing titer: from 1 : 8 to 1 : 320. In the patient L. D. M., 21-year-old, history of illness 2106/1964, with diagnosis Parotitis epidemica, also without clinical evidence for liver affection, the following results were obtained: Weltmann — 7,5 t. t., SGPT — 90 TE, aldolase — 11 AU. Eight days after dismissal, the identical 3 tests were found to be normalized.

In an other patient the reverse phenomenon was observed — obvious clinical data for hepatic disorder, but lack of paraclinical confirmation: K. S. T., 26-year-old, history of illness 2245/1964. Onset of disease 3—4 days prior to admission to the clinic with increased temperature, loss of appetite, darkening of the urine and yellowish tinge in the eyes. Consecutively, swellings underneath both submandibular regions appeared. Past history — icterus two times in childhood. No information for contact with hepatitis patients and no injections received during the last 6 months. At the clinic he was admitted (diagnosis: Obs. Hepatitis epidemica) with temperature 38,4°C, with icterus along the sclerae and skin, with slightly enlarged, not painful liver (lower limit — 1 cm underneath the costal arch), with evidence for increased urobilinogen in the urine and bilaterally enlarged (the size of small almond) submaxillary salivary glands. On the following day the lumen of the ductus parotidicus turned red, and after further 7 days the left parotid gland was swelled. About the third day the hyperurobilinogenuria disappeared, the size of the liver and the colour of sclerae and skin returned to normal. Pancreatic diastase in the urine — 64WE, in the serum — 32 WE, blood sugar — 120 mg%. The same patient underwent repeated clinical tests as follows: McLagan, Weltmann, bromsulphalein, iron, copper and mucoproteins in the serum and the proteinogram. All of them

were entirely normal. The twofold setting of the hemagglutination inhibition test reaction for epidemic parotitis exhibited positive result with 10-fold rising of titer. The patient was discharged healthy with diagnosis Parotitis epidemica.

Of interest is also the patient D. M. D., 26-year-old, history of illness 2341/1964, diagnosis: parotitis epidemica, orchitis parotidea dextra. Here the clinical phenomenon determined by the liver (loss of appetite, weakness, feeling of burden in the right subcostal area, mild hepatomegaly — 1 cm) were developed on the 5th day after dismissal and were accompanied by insignificant paraclinical alterations (McLagan—49 Ph.U. Weltmann—7,5 t. t., aldolase — 10 AU). At the second check examination (18 days later), the patient was completely free of complaints and the tests were within normal limits.

Discussion of the results

The clinical and paraclinical indices established in our series of patients with parotitis, considered separately, couldn't be assumed as specific for hepatic lesion, but their combined manifestation in a particular patient is indicative for such an assumption with rather high degree probability. Possibly, this lesion is of the type coined as „unspecific reactive hepatitis“ (7, 12). An exact and absolute figure of the cases with similar hepatitis among the patients observed cannot be postulated, as in some of them merely 1 or 2 of the above stated tests were positive (i. e. abnormal).

The logical question arises: Isn't it possible that in some of the cases observed a mixed infection is practically concerned, a casual coincidence in the timing of mumps and acute present or recently sustained epidemic hepatitis? The objection to this assumption is based on the results of clinical and paraclinical investigations, as well as on the fact that none of the patients considered exhibited evidence for prodromal (pre-icterus) period, contact with hepatic patients, blood manipulations and recent history of jaundice. The circumstance that hepatic phenomena appeared during the parotitic illness and fully disappeared after recovery, is similarly indicative for an eventual causative link between parotitis and hepatitis.

Much less justified is the reverse question: Couldn't the data observed for parotitic infection be possibly assumed as manifestation of atypical (uncommon) reaction on the part of the macroorganism to the hepatic virus, whose sphere of pathogenous action often spreads far beyond the territory of the liver? We should immediately point out, that all the parotites observed (orchites and meningites as well) in every respect (epidemiological included) were typical and did not warrant doubts/suspicious on etiological ground. As a matter of fact, the latter was proved also serologically with the hemagglutination inhibition test.

An other problem sparking a great surge of interest is outlined by the question: Isn't it possible that in some cases of parotitis infection merely hepatitis to be developed, without parotitis? Since occasionally the so-called „autonomous“ orchites, meningites and pancreatites are also encountered, we could accept the existence also of „autonomous hepatitis“, in which the infectious disease would be manifested by phenomena merely on behalf

of the liver. These clinical forms of parotitis infection for the time being are probably comprised within the frames of the complex concept „epidemic hepatitis“.

Conclusion

The results of our investigations justify the assumption that the liver in a certain percentage of the cases with parotitis infection observed, was equally involved by the morbid process. The pathological phenomena on behalf of the liver in the total number of our patients were slight and transitory. The latter fact should be always beared in mind, during investigation and treatment of parotitis patients with a view to eventual hepatic lesions as well as during establishing the diagnosis of patients with epidemic hepatitis for providing more details etiologicalwise of this serious and mass morbid condition.

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ЭПИДЕМИЧЕСКИЙ ПАРОТИТ И ПЕЧЕНЬ

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РЕЗЮМЕ

На основании целенаправленного наблюдения 87 больных эпидемическим паротитом авторы устанавливают у известной части из них параклинические и отчасти клинические данные легкого и быстропроходящего поражения печени. Обсуждаются вытекающие из этого факта практические выводы в связи с диагностикой и лечением больных со свинкой и эпидемическим гепатитом.