Concluzii

1. Factorii cauzali exogeni în PC cu recidive sunt reprezentati preponderent de consumul de alcool și tabagism, cu o incidență crescută în rândurile bărbaților cu vârsta cuprinsă între 40 și 50 ani.

2. La evaluarea maladiilor asociate PC cu recidive s-a determinat că factorii importanți endogeni, care provoacă declanșarea PC sunt: colecistita cronică, sindromul postcolecistectomic, preponderent la femei.

3. Principalele manifestări clinice ale PC cu recidive s-au dovedit a fi sindromul dolor, sindromul dispeptic și deregările funcției exocrine și endocrine, confirmate prin creatoree, steatoree (90%), scăderea nivelului de Elastază-1 în materiile fecale și DZ.

4. Ecografia transabdomină rămâne a fi o metodă utilă în diagnosticul PC, cu o înaltă sensibilitate, specificitate și eficiență, lipsită de nocivitate pentru pacient și examinar.

Bibliografie


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FUNCTIONAL ANATOMY AND MULTIPLE IMAGING MODALITIES OF EVALUATION OF RIEDEL’S LOBE OF THE LIVER

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Summary

The significance of functional anatomy for the doctor’s practice is to perform affected segmental or subsegmental resection of the liver, know exactly which parts of the liver are diseased so that the vascular supply and venous and biliary drainage can be preserved. Riedel’s lobe appears to be a common variant of normal anatomy, its prevalence being dependent on age-related changes in liver size and skeletal shape.

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Recognizing these different anomalies is essential since many of them can mimic pathological conditions and others are important in surgical planning, such as living donor liver transplantation.

Rezumat

Anatomia funcțională și modalitățile multiple imagistice de evaluare a lobului suplimentar al ficatului

Semnificația anatomiei funcționale pentru medicul practician constă în efectuarea rezeției segmentare sau subsegmentare a ficatului, fiind necesar de precizat loburile afectate ale ficatului, astfel încât furnizarea vasculară și drenajul venos și biliar fiind conservat. Lobul Riedel pare să fie o variantă a anatomei normale, prevalența fiind dependentă de modificările de vârstă în mărimea ficatului și forma scheletului. Recunoașterea acestor anomalii este esențială, deoarece multe dintre ele pot imita condițiile patologice și altele sunt importante în planificarea chirurgicală, cum ar fi transplantul hepatic.

Topicality

A congenital malformation is a physical anomaly from birth that is a defect perceived as a problem. A typical combination of malformations affecting more than one body part is referred to as a malformation syndrome. A possible cause of a congenital disorder may also be due to abnormal morphogenesis (organ development) or due to an adverse effect on the process of development that is influenced by a complex mix of factors including genetics, environment, and behaviors. However, there are many birth defects of unknown cause.

In clinical practice congenital abnormalities of the liver are very rare (1). A possibility of the presence of the abnormal liver has to be kept in mind when an unexplained abdominal mass is encountered. Congenital disorders of the liver are rare but nevertheless, there are many kinds of described congenital abnormalities of the liver due to agenesis (lack of development) of its lobes. These include: absence of its segments, deformed lobes, decrease in size of lobes, lobar atrophy (shrunken), hypoplastic (under-developed) lobes, transposition of the gall bladder, Riedel's lobe (a tongue like projection of the right lobe of the liver).

Riedel's lobe (named after the German surgeon, Bernhard Moritz Carl Ludwig Riedel) is a downward tongue-like projection of the anterior edge of the right liver lobe to the right of the gallbladder (3). Knowledge of this anomaly is important as it does not always remain clinically latent. The possible presence of abnormal liver has to be kept in mind whenever unexplained abdominal mass is encountered (2).

Description

The medical condition known in the literature as Riedel’s lobe, was described for the first time by Corbin in 1830, then by Cruvelhier in 1834. In 1888, Riedel reported on a group of 10 cases (3). Riedel himself described this rare morphologic anomaly of hepatic lobulation as a "round tumor on the anterior side of the liver, near the gallbladder, to its right" (found in the literature also as floating lobe, "tongue like" or constriction lobe, by other authors).

Development anomalies may occur within the liver in regard to the arrangement of the liver cells, the lobules, the intrahepatic bile ducts, and also in the mesenchymal architecture of the portal areas. The liver is frequently involved in the spectrum of situs anomalies. The tongue-like accessory lobe of the liver (Riedel's lobe) that is related to the inferior portion of the right hepatic lobe is a common finding on nuclear medicine imaging of the liver (up to 20% in females).

Riedel's lobe (1) represents an anomaly of the right lobe of the liver which is usually easy to recognize and rarely of clinical significance. An occasional tongue-shaped process of liver, frequently found protruding over the gallbladder in cases of chronic cholecystitis. It may present as a localized tumor in the right upper quadrant of the abdomen, however, and, when associated with liver disease such as cirrhosis, may be mistaken for an extrahepatic or an intrahepatic lesion.
Riedel's lobe appears to be a common variant of normal anatomy, its prevalence being dependent on age-related changes in liver size and skeletal shape (5). The morphologic anomalies of hepatic growth can be caused either by insufficient or excessive development of the liver (4). Also, these anomalies can appear together with malformation of other structures, especially the diaphragm - diaphragmatic hernia - and the hepatic sustainability system, but also with other malformations like ectopic kidney (6, 7). The morphologic anomalies caused by insufficient development of the left hepatic lobe can cause gastric volvulus, but the anomalies of the right hepatic lobe can remain asymptomatic or can cause portal hypertension (8, 9). The morphologic anomalies caused by excessive development are induced by the formation of accessory lobes, in infra-hepatic positions (10).

The initial impression of a Riedel's lobe was apparently confirmed by the first sulfur colloid study and the 48-hr gallium scan. However the uptake of sulfur colloid and dihydrotioctic acid confirmed that this was simply a highly mobile lobe of the liver that had depisted at the right hipocndrium to the left and was suspended from the left lobe by an attenuated pedicle. Accessory lobes of the liver are a much rarer occurrence than Riedel's lobes (9) and are usually noted incidentally at postmortem. The accessory lobe is usually attached to the liver by a mesentery or by a pedide, and an artery, vein, portal vein, and bile duct are necessary for its viability.

The Riedel’s lobe is the best-known example of sesile accessory lobe. The congenital or acquired etiology of this morphologic hepatic anomaly is still controversial. Riedel explained its appearance as a consequence of the tractions exercised by the adherential syndrome, in the context of a lithiatic cholecystitis (3). Other authors prefer to explain it in the framework of hepatic modifications caused by age or by skeletal anomalies - ciphoscoliosis with wide thorax. The assumption of a congenital origin of Riedel’s lobe is supported by a congenital disembioplastic anomaly in the development of a hepatic bud, centered by a vitelo-mesenteric vascular axis or as a direct consequence of the persistence of mesodermic septum. Compared to the anatomic variants, the morphologic anomalies of hepatic development are much rare. Because of the rarity of this pathology and the small numbers of cases described in the literature there is no therapeutic algorithmical approach to it.

Although Riedel reported that the anomaly is seen most frequently in women (as in our case) other authors did not find significant differences in the prevalence of Riedel's lobe between sexes (3, 8). The slightly modified aspect of the tumour structure is a consequence of the narrow pedicle and secondary vascular disorders due to fibrosis at this level (described as part of the natural evolution of the tumoral hypertrophy of Riedel's lobe, with narrow pedicle). The structural alterations of the hypertrophic Riedel's lobe could be discerned by the macroscopic aspect of the sectioned specimen. If the parenchyma of the Riedel's lobe had a normal aspect, we would have considered, at least theoretically, its prelevation in order to realize a "living related", hepatic transplant. This would have presented the possibility of increasing the number of available organs.

It has been considered as either a sessile accessory lobe of the liver or as a normal variant. A Riedel's lobe varies in size and shape and may extend into the right iliac fossa. Commonly these persons present with a narrow chest. Riedel's lobe may occasionally be attached to the liver by a
wide sulcus, which can undergo torsion, but in most persons this anomaly is of no clinical significance although it might erroneously be diagnosed as hepatomegaly.

Possible complications found in the literature are: torsion with noisy clinical presentation, emergency surgical intervention being necessary, for preventing secondary fibrinolysis due to intratumoral ischemic lesions - and others such as metastatic lesion in Riedel's lobe after a mammal neoplasm, or hepatic hydatide cysts of the Riedel's lobe (8, 10). The prognosis of tumoral hypertrophy of Riedel’s lobe is a good one, considering the early stage diagnosis, the lack of complications and the proper treatment - the best of which was the resection of the hypertrophic parenchyma.

Diagnosis

Congenital liver defects that affect the flow of bile are usually diagnosed at birth or shortly afterwards. In addition to a complete medical history and physical examination, diagnostic procedures for a congenital liver defect may include the following: blood tests to include liver function tests - a series of special blood tests that can determine if the liver is functioning properly. Liver biopsy is a procedure in which tissue samples from the liver are removed (with a needle or during surgery) from the body for examination under a microscope. Riedel's lobe of the liver can be evaluated by multiple imaging modalities. Therefore, the imagistic examinations, such as: Ultrasound, CT, magnetic resonance imaging, arteriography, Nuclear Medicine have proven themselves to be extremely useful for outlining this pathology, always having in mind what Riedel himself said: "Anatomy and more anatomy is the essence of medicine".

The abdominal ultrasound was useful in discovering the lesion, together with the Doppler examination showing the absence of the vascular signal in the cystic lesions presented in the tumour. More specific data were obtained by the computed tomography, magnetic resonance imaging and arteriographic examinations.
Ultrasound— is the first and the most commonly obtained method of examination in patients with RUQ pains, abnormal LFTs, or suspected liver masses. It is a noninvasive and excellent screening tool used to evaluate the presence of bile duct obstruction and gallstones as well as to distinguish a solid lesion from a cystic one and has low sensitivity and high false negative rate for detection of liver metastases.

Ultrasound Doppler imaging can be very helpful in identifying vascular abnormalities, i.e. patency of hepatic vessels, portal vein, and IVC as well as flow direction in these vessels. Flow in the portal vein and hepatic arteries are hepatopedal (toward the liver) while flow in hepatic veins and hepatic ducts are hepatofugal (away from the liver).

Riedel's lobe should be considered in all patients undergoing cross-sectional imaging. It may harbor a lesion that might not be demonstrated unless the most inferior aspect of the liver is imaged.

The Riedel's lobe may be seen on ultrasound as a downward extension of the right lobe of liver. This gives the impression, at times, of the fleshy part of the Riedel's lobe being a right renal mass. The ultrasound images of this case convinced us that this right renal mass mimic was in fact a Riedel's lobe of the liver. On ultrasound the Riedel's lobe can be visualized in the sagittal plane as a structure with the same echo pattern as the liver and projecting from the inferior border of the liver in front of the right kidney.

The above ultrasound images show what appears to be right renal lower pole mass (image in top row left). But further ultrasound imaging of the liver shows it to be an extension of the right lobe draped over the anterior surface of the right kidney. The apparent mass (M) appears to be on the tip of the tongue of liver tissue. This beak of liver tissue extending from the right lobe of liver is called Riedel's lobe of the liver and is a very rare normal variant.

Computed tomography - uses X-ray to acquire data that can be displayed in axial, coronal, and sagittal planes. Iodinated contrast is commonly used in liver imaging to demonstrate any abnormal enhancement of a hepatic lesion and to show vascular structures. An I.V. bolus of 100 to 150 ml of iodinated contrast is often used. The contrast agent is injected into veins, travels to the heart, aorta, celiac trunk, hepatic arteries, liver parenchyma and mixes with blood in portal veins drained into venules and then hepatic veins and then out to the IVC. The hepatic enhancement can be divided into 3 phases: 1-Arterial phase (when the contrast just fills up the aorta and the main hepatic arterial structures), kidneys also show corticomedullary differentiation. 2-Portal venous phase (when the contrast disperses into the liver parenchyma (liver brighten) and mixes with portal blood (portal v brighten). 3-Equilibrium phase (Delayed phase) (when the contrast further scatters in the parenchyma and drains out the hepatic veins and also be seen in the renal collecting system).

When searching for hypervascular lesions, such as hepatoma or metastastic disease, a three-phase technique often should be used: non-contrast phase, arterial phase, and portal venous phase. The appropriate delay times for scanning in the arterial phase and portal venous phase for a 2-3 ml/sec injection are 25 seconds and 70 seconds, respectively. The rationale behind this technique is that primary and secondary malignancies of the liver typically have hepatic arterial supply, thus will enhance during the arterial phase, whereas benign entities and normal liver parenchyma have primarily portal venous supply, therefore, will enhance during portal-venous phase of I.V. contrast.

Indications for liver MRI are: patients allergic to iodinated contrast agents; lesion detection & characterization; anatomic location; hepatic vascular patency; biliary duct system. MRI has many advantages over CT, such as: high soft tissue contrast resolution (can see smaller lesions); multiple sequences; multiplanar capability; MRA, MRV, MRCP, no radiation, no iodinated contrast.

However, MRI is similar to computed tomography in that it has the same dynamic multiphase contrast enhancement capability. MRI can be helpful in the characterization of a small (< 2 cm) benign hemangioma that is equivocal on CT.
Computed tomography reveals agenesis of the right lobe of the liver with compensatory hypertrophy of the left lobe.

Computed tomography shows tongue like projection (arrow) of caudate lobe at the upper image.

An occasional tonguelike process extending downward from the right lobe of the liver lateral to the gallbladder; a similar process may, though rarely, extend from the left lobe.

Riedel's lobe denotes a prominent right liver lobe that extends below the level of the umbilicus. Riedel's lobe is an anatomic variation that occurs more often in women than in men. It may be mistaken for an abdominal mass. Liver biochemical test levels are normal, and the diagnosis is established by ultrasound. Treatment may include reconstructive surgery though sometimes, a liver transplant may be necessary.

**Conclusion**

Summarising, we can state that Riedel's lobe, despite its reduced incidence, can pose several diagnostic problems. Most patients are asymptomatic and the diagnosis is often made as an incidental finding at the time of surgery, radiographic, or endoscopic examination, or at the time of autopsy not the least is the. Accessory lobes may also simulate tumors with or without
clinical signs, but in most persons this anomaly is of no clinical significance although it might erroneously be diagnosed as hepatomegaly. The significance of functional anatomy for the practical doctor to perform segmental or subsegmental resection of the liver, must know exactly which parts of the liver are diseased so that vascular supply and venous and biliary drainage can be preserved.

In cases in which the accessory lobe has a pedicle, torsion is a common event leading to discovery of the abnormal mass. In these cases (presence of clinical signs or complications of Riedel's lobe) liver resection is the best treatment. Therefore, the imagistic examinations (US, CT, MRI, and arteriography) have proven themselves to be extremely useful for outlining this pathology, always having in mind what Riedel himself said: "Anatomy and more anatomy is the essence of therapy".

Recognizing these different anomalies is essential since many of them can mimic pathological conditions and others are important in surgical planning, such as living donor liver transplantation.

References