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The combination of physical examination and biochemistry profiles can indicate the presence and degree of hepatic disease but these tests do not always determine exactly the nature of the disease. Therefore, liver biopsies (LB) constitute another step in the diagnosis and determination of prognosis of hepatic disorders, providing information or differentiating between various aetiologies of the same disease.

The advantage of taking needle biopsies resides in the non-invasive nature of the test, the short time invested and the fact that they can be repeated. The main problems they pose refer to the size of the sample obtained, which might not be representative and the safety aspect.

The decision on the different technique options will depend also on the personal preferences and previous experience of the surgeon, on any previous pathology, its size and location, aim of biopsy, visibility, general condition of the patient and cost of the procedure.

Before proceeding with any type of LB, it is necessary to perform a coagulation profile on the patient, starve the animal and test haematological and biochemistry values and take abdominal x-rays to evaluate hepatic size. We must remember to maintain sterility on any biopsy technique.

The decision of administrating any type of anaesthesia or sedation, or none of them, will depend on the patient’s general condition and disposition, and on the technique used.

Regarding the type of needles used, there is a wide range of calibres, lengths, types, automatic or not, etc.

Regardless of calibre, needles are classified according to its use: puncture or aspiration, or modified to cut into tissue. The most commonly used are the Menghini, Chiba (for aspiration), Van Silverman modified by Franklin, and Trucut (both for cutting), being the latter the most indicated, in our experience, the most indicated for laparoscopic LB techniques. During the process of selection between one or another, factors such as reason for biopsy, level of risk, presence of coagulopathies and general condition of the patient, the professional expertise of the surgeon performing the biopsy and histopathologists we work with, will affect the final decision.

One of the greatest concerns when taking a needle biopsy is the possible insufficient size of the sample, which might then not be representative. Recent studies recommend caution with the interpretation of the samples taken on fine needle aspiration, as in only between 48 to 72% of the cases will the cytologic diagnosis correlate the final histopathologic diagnosis from biopsy.

However, the percentage of reliability on samples taken with fine Trucut 20G from hepatic masses increases to 84.4%.

A good hepatic biopsy should measure a minimum of 10mm length. In fact, it has been reported that...
an optimal sample should measure 15 to 25mm, with an average of 11 portal triads. Therefore, we consider Trucut as the option of choice, since it samples a portion of tissue and not only aspiration of cells. We can obtain reliable samples in 94% of the cases, in comparison to 72% with Menghini needles. There are currently new variations of the Trucut needle in research, such as automatic guns or Acecut, with which a bigger sample is obtained with a minimal margin of error for the more unexperienced professionals, however with a higher degree of postoperative pain.

The correct guidance is not only essential to minimise complications and risks, but also to increase the probability of obtaining a good sample with good histologic correlation, increasing in this way the reliability and advantages of liver biopsy. It is therefore a generalised tendency to take these biopsies with the guidance of echography or laparoscopy.

Ultrasound guided biopsies do not necessarily require general anaesthesia, neither constitute an invasive procedure. The material is usually familiar to the clinician and of common use in daily clinical work. It is quick, inexpensive, transportable, does not require ionizing radiation and provides good guidance in different planes: axial, longitudinal and oblique. For these reasons, it is considered the most popular technique for the sampling of liver biopsies. However, the use of guides for the biopsy, the difficulty in visualizing the needle and the presence of focal circumscribed lesions in a particular area of the liver are circumstances that restrain the ability of taking an adequate biopsy. Even so, with minimal invasion and its usefulness for taking a biopsy with minimal complications, its utility is unquestionable.

Even so, we will have to carefully assess the reliability of the sample in cases of fine needle aspirate, even if guided by ultrasound, as the correlation between cytology and definite diagnosis can oscillate between 30 and 50% only.

Finally, regarding the technique for laparoscopy guided biopsy, the advantages are clear in the sense that we will have a direct method of visualizing the whole of the abdominal cavity, as well as the liver, being able to collect more information than with any other direct or indirect method, minimising also any complications.

The use of echolaparoscopy will make the information complete obtained “de visu” with the direct echographic examination of the liver parenchyma, being of great use in those neoplasias or pathologies where the lesions do not protrude or alter the external structure of the liver. It will also provide very useful information regarding blood vessels and other main structures, reducing also the risk of haemorrhage and providing more details of the real state of the organ.

Additionally, laparoscopy will allow hepatic macrobiopsies, of larger size, as well as direct inspection of the chose site, offering a high reliability in the diagnosis with also minimal disadvantages.

In this talk we will carry out a comparative study of the different techniques, their efficacy as well as an evaluation of their advantages and disadvantages.

References