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ORIGINAL REPORT

Diagnostic performance of imaging-guided core needle biopsy of the mesentery and peritoneum☆

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KEYWORDS
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Omental lesions;
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Abstract
Objective: To evaluate the diagnostic performance of imaging-guided core needle biopsy of nodules and diffuse infiltration of the omentum or of the peritoneum.
Materials and methods: We retrospectively evaluated 57 patients who underwent core needle biopsy of the peritoneum or of the omentum between March 2014 and January 2017. We used computed tomography (CT) to plan the biopsy. Biopsies were guided by CT or ultrasonography (US). We classified the results as diagnostic (benign/malignant) or inconclusive (inadequate sample). We calculated the sensitivity, specificity, positive-predictive value, and negative predictive value. We analyzed whether the specimen was diagnostic depending on the imaging technique used (CT or US) and on the type of omental or peritoneal involvement from which the specimen was obtained (mass, nodule, or diffuse involvement).
Results: All (100%) the percutaneous biopsies were diagnostic. The sensitivity of the technique was 98.18% and the specificity was 100%. The positive predictive value was 100% and the negative predictive value was 50%. Both the specimens obtained under CT guidance (n = 10) and those obtained under US guidance (n = 47) were diagnostic. Likewise, biopsies of masses (n = 24), of nodules (n = 17), and even of diffuse infiltration (n = 16) of the peritoneum or omentum enabled the histologic diagnosis. The rate of complications was 1.75% (one death).
Conclusion: Percutaneous core needle biopsy has high sensitivity regardless of the imaging technique used to guide the technique (CT or US) and of the type of lesion biopsied (mass, nodule, diffuse infiltration). It is a useful technique with a very low rate of complications, although severe complications can occur.

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PALABRAS CLAVE
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Especificidad

Rentabilidad diagnóstica de la biopsia con aguja gruesa guiada por técnicas de imagen del mesenterio y del peritoneo

Resumen
Objetivo: Evaluar la rentabilidad de la biopsia percutánea con aguja gruesa guiada por técnicas de imagen de nódulos e infiltración difusa del omento o del peritoneo.
Material y métodos: Se evalúan retrospectivamente 57 pacientes a los que se realizó una biopsia con aguja gruesa del peritoneo o del omento entre marzo de 2014 y enero de 2017. La tomografía computarizada (TC) al diagnóstico se empleó para planificar la biopsia. Los resultados se clasificaron en diagnósticos (benignos/malignos) o no concluyentes (muestra insuficiente). Se calcularon la sensibilidad, la especificidad y el valor predictivo positivo y negativo. Se analizó si la muestra fue diagnóstica según la técnica de imagen empleada (TC o ecografía) y el tipo de afectación del omento-peritoneo biopsiada (masa, nódulo o infiltración difusa).
Resultados: El 100% de las biopsias percutáneas fueron diagnósticas. La sensibilidad de la técnica fue del 98,18% y la especificidad fue del 100%. El valor predictivo positivo fue del 100% y el negativo fue del 50%. Tanto las muestras obtenidas con guía por TC (10) como las guiadas por ecografía (47) fueron diagnósticas. Así mismo, las biopsias de masas (24), nódulos (17) e incluso de infiltración difusa (16) del peritoneo-omento permitieron el diagnóstico histológico. La tasa de complicaciones fue del 1,75% (una muerte).
Conclusión: La biopsia percutánea con aguja gruesa es una técnica con una alta sensibilidad independientemente de la técnica de imagen empleada como guía de la punción (TC o ecografía) y del tipo de lesión biopsiada (masa, nódulo o infiltración difusa). Es una técnica útil con escasa tasa de complicaciones, aunque a veces pueden ser graves.

Introduction

Both the mesentery and the peritoneum are home to a great variety of pathological processes, both benign and malignant, that may infiltrate them, distort their architecture, or cause thickening of the peritoneal covering. The most common neoplasms that affect the peritoneum are the metastatic carcinoma (of colon, ovary and stomach, and less frequently, of pancreas, bile duct, and uterus), and the lymphoma. Other even more rare etiologies are the bladder carcinoma, the gastrointestinal leiomyosarcomas, and metastatic melanomas. The primary mesenteric carcinoid tumor, the epyplon and peritoneum neoplams are less common and, in general, they have mesenchymal origin. Among the benign process we find granulomatous conditions, hematomas, infections or inflammatory processes—all of them much less commom.[1–3]

The metastatic damage may occur in the form of a mass or diffuse infiltration of fat due to contiguity, or lymphatic or hematogenous dissemination. Also, metastatic nodules can be seen both on the peritoneal surface and the mesentery, with variable sizes ranging from a few millimeters to several centimeters conguring genuine masses. In other cases, only the diffuse thickening of the peritoneum is evident. Both the primary peritoneal tumors and the benign processes described can show overlapping findings in the different imaging modalities.[1–4] For all this, it is essential to obtain a specimen to conduct the histological study and know what the origin really is. The biopsy will be particularly important in patients with a history of a known tumor because we will be able to confirm the origin of tumor and know whether it is metastatic, a tumor of a different origin, or a benign lesion, so we can prescribe the most appropriate oncological treatment in each case.[5] The laparoscopy procedure allows us to detect peritoneal lesions and obtain tissues, even from different areas of the lesion, in order to be able to make a diagnosis with high diagnostic reliability. However, it is an invasive technique that requires anesthesia and elevates the patient's risk. Today, because of all its complications, it is not the first technique of choice.[6,7]

The process of obtaining imaging-guided biopsies is considered a safe procedure that is performed using local anesthesia, has a low incidence of complications and high diagnostic reliability. There are very few publications of series of patients with peritoneal or omental lesions biopsized using ultrasound or computed tomography (CT)-guided core needles, although this technique has a high diagnostic performance and a low rate of complications.[5,7–11]

The goal of our work was to evaluate the diagnostic performance of imaging-guided (ultrasound or CT scan) percutaneous core needle biopsies of nodular and diffuse infiltration of the omentum or the peritoneum, and emphasize the diagnostic reliability of this procedure, the imaging modality used, and type of peritoneal damage sustained by each patient.