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ORIGINAL ARTICLE

Correlation between preoperative tomographic staging and definitive histopathologic results in gastric cancer at the Hospital Central Militar☆

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KEYWORDS
Gastric cancer;
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Abstract
Background: In relation to the number of new cases diagnosed, gastric cancer is the fourth most common cancer worldwide, and the second cause of cancer death. The development of multidetector tomography has improved the preoperative staging of gastric cancer.
Aim: To correlate preoperative tomographic studies with the definitive pathologic results according to the TNM staging system.
Methods: A retrospective, cross-sectional study within the time frame of January 2009 to December 2013 was conducted that included the case records of 67 patients. They all had upper endoscopy and preoperative multidetector tomography examinations, underwent surgical resection, and had the corresponding histopathology study. Statistical analysis was carried out with the SPSS version 15.0 software and the sensitivity and specificity calculations were made using the Excel 2011 program for Mac.
Results: The majority of the patients included in the case series had clinical stage III and IV disease. When compared with the histopathologic result, the overall accuracy of multidetector CT was 83% (T0 96%, T1 94%, T2 93%, T3 67%, and T4 67%) for tumor size (T) and was 70% (N0 72%, N1 73%, N2 70%, and N3 66%) for lymph node involvement (N). Overall sensitivity was 48% (T0 100%, T1 0%, T2 33%, T3 44%, and T4 65%) for T and was 41% (N0 58%, N1 56%, N2 15%, and N3 35%) for N. A strong association between the multidetector CT results and the pathology results was demonstrated through the Spearman's correlation, especially in T4 and N3.

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Conclusions: Multidetector computed tomography showed greater congruency in detecting stages T4, N0, and N3 in gastric cancer, when compared with the definitive histopathologic results.
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PALABRAS CLAVE
Cáncer gástrico;
Estadificación;
TC multidetector;
Histopatológico

Correlación entre la estadificación tomográfica preoperatoria con los resultados histopatológicos definitivos en cáncer gástrico en el Hospital Central Militar

Resumen
Antecedentes: El cáncer gástrico es el cuarto tipo de cáncer más común de reciente diagnóstico y la segunda causa de muerte relacionada con cáncer en el mundo. El desarrollo de tomografía multidetector ha mejorado la estadificación preoperatoria del cáncer gástrico.
Objetivo: Correlacionar los informes tomográficos preoperatorios con los resultados definitivos de patología de acuerdo con el sistema TNM.
Métodos: Análisis transversal, retrospectivo. De enero del 2009 a diciembre del 2013, se incluyó a 67 pacientes, todos tenían endoscopia superior, tomografía preoperatoria, fueron sometidos a cirugía resectiva y contaban con resultado histopatológico. El análisis estadístico se realizó con el programa de computadora SPSS versión 15.0. El cálculo de sensibilidad y especificidad se realizó con el programa Excel 2011 para Mac.
Resultados: La mayoría de los pacientes de la serie se encontraban en estadio clínico III y IV. La precisión global de la tomografía computarizada (TC) multidetector comparado con el resultado histopatológico para el tamaño del tumor (T) fue del 83% (T0 96%, T1 94%, T2 93%, T3 67% y T4 67%) y para N del 70% (N0 72%, N1 73%, N2 70% y N3 66%), la sensibilidad global para T fue del 48% (T0 100%, T1 0%, T2 33%, T3 44% y T4 65%) y para N del 41% (N0 58%, N1 56%, N2 15% y N3 35%). Así mismo se demostró, mediante correlación de Spearman, una fuerte asociación entre los resultados de la TC multidetector y el resultado de patología, sobre todo en T4 y N3.
Conclusiones: La TC multidetector mostró mayor congruencia en detectar las etapas T4, N0 y N3 en cáncer gástrico, comparadas con los resultados histopatológicos definitivos.
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Introduction

The incidence of gastric cancer varies greatly worldwide. It is still the fourth most common type of newly diagnosed cases of cancer and is the second cause of cancer-related death in the world.[1] Despite the advances in diagnostic tools and multimodal treatment, the 5-year survival rate for all patients at all disease stages is still below 30%.[2] The preoperative evaluation of patients with gastric adenocarcinoma involves making the diagnosis, evaluating local disease, searching for distant disease, and assessing the patient's general medical condition. Three-dimensional computed tomography (3D-CT), with combined water and air distension, can improve the preoperative staging precision of gastric cancer in relation to tumor size (T) and lymph node involvement (N), with 78% diagnostic accuracy for lymph nodes.[3]

Gastric cancer is a locoregional disease with a high tendency for lymph node metastasis. Therefore, lymph node stage continues to be one of the most critical independent predictors of survival for patients after gastrectomy.[4,5] Surgical resection is still the basis of curative treatment for gastric cancer. According to the Union for International Cancer Control (UICC), curative surgical treatment strives to eliminate all tumor disease, obtaining safe surgical margins with no microscopic disease residuals, known as R0 surgery, and it reports better long-term disease control. There is disagreement between western and Japanese case series as to the extension of lymph node dissection, and total or subtotal gastrectomy with D2 dissection is the criterion standard of surgical treatment for gastric cancer in East Asia. A meta-analysis that compared gastrectomy with D1 versus D2 dissection concluded that the former was associated with less anastomosis leakage, lower postoperative complication and reoperation rates, shorter hospital stay, and a lower mortality rate at 30 days. The 5-year survival rate was similar for the two procedures.[6]

Multidetector CT development has improved gastric cancer staging, but the results with these techniques are not satisfactory, especially in evaluating tumor depth and N. There are no studies from our hospital that compare the preoperative diagnostic accuracy of tomography with the definitive histopathologic result. The evaluation of this information is important because larger resections

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