

倪鸣飞,王丽君,董越,苗延巍,张竞文.能谱CT成像鉴别诊断良恶性甲状腺结节[J].中国医学影像技术,2012,28(9):1642-1645

## 能谱CT成像鉴别诊断良恶性甲状腺结节

### Spectral CT imaging in differential diagnosis of benign and malignant thyroid nodules

投稿时间: 2012-03-06 最后修改时间: 2012-05-11

DOI:

中文关键词: [甲状腺肿瘤](#) [结节性甲状腺肿](#) [体层摄影术](#),[X线计算机](#)

英文关键词:[Thyroid neoplasms](#) [Nodular goiter](#) [Tomography, X-ray computed](#)

基金项目:

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中文摘要:

目的 探讨能谱CT对甲状腺结节的检出及定性诊断的价值。方法 对27例甲状腺结节患者行甲状腺能谱CT增强扫描,发现结节性甲状腺肿15个,乳头状癌结节13个。采用5级评分法分别对不同期相的70 keV图像、碘基图像、水基图像、QC(Quality Check)图像进行评分,记录甲状腺结节乳头状结构的边界、形态、位置,测量40~140 keV(以10 keV为间隔)各能量水平CT值,计算乳头状结构的能谱曲线斜率,测量碘-水图与水-碘图上乳头状结构的碘、水浓度值。结果 ①增强扫描图像质量评分中,碘基图像>70 keV图像>QC图像>水基图像,差异有统计学意义( $P<0.001$ );②结节性甲状腺肿结节内乳头状结构均位于瘤体边缘,多形态规则;乳头状癌结节内乳头状结构多位于结节中心,且形态不规则并可见棘状突起;③平扫示结节性甲状腺肿结节内乳头状结构碘含量显著高于甲状腺乳头状癌( $P<0.001$ ),两者水含量差异无统计学意义( $P=0.058$ );④平扫示结节性甲状腺肿GSI曲线斜率与甲状腺乳头状癌间差异有统计学意义( $P=0.002$ )。结论 甲状腺增强扫描碘基图像有助于清晰显示甲状腺结节的细节,尤其是结节内乳头状结构;能谱CT平扫定量测量甲状腺结节内乳头状结构可能有助于鉴别甲状腺良恶性结节。

英文摘要:

**Objective** To explore the value of spectral CT imaging for detecting and diagnosis of thyroidal nodules. **Methods** Totally 27 patients with thyroidal nodules confirmed by pathology underwent contrast enhanced CT scan, 15 nodular goiter nodules and 13 papillary thyroid carcinoma nodules were analyzed. Image quality score of different phases in 70 keV image, iodine-water image, water-iodine image and QC (Quality Check) image were evaluated. The margin, shape, and location of the papillary structure inside thyroidal nodules were recorded, CT values from 40 keV to 140 keV (10 keV step) and the iodine-water concentration and water-iodine concentration were measured, while the slope of papillary structures were calculated. **Results** ①For image quality score, iodine-water image > 70 keV image > QC image > water-iodine image in contrast CT image ( $P<0.001$ ). ②Papillary structure of thyroidal carcinoma most commonly located in central part with irregular shape, while of nodular goiter most located in the edge with regular shape. ③Spectral CT showed the iodine-water concentration of the nodular goiter was higher than that of papillary thyroid carcinoma ( $P<0.001$ ), but their water-iodine concentrations were similar ( $P=0.058$ ). ④There were significant difference of the GSI slope rate of nodular goiter and papillary thyroid carcinoma ( $P=0.002$ ). **Conclusion** Iodine-water image of contrast spectral CT can clearly show the papillary structure of thyroidal nodules. Quantitative measurement of the papillary structure in thyroid nodules using spectral CT may be helpful to differentiating benign from malignant nodules.

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