



MRI in suspected appendicitis in pregnancy

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Objective

Pregnant women with acute abdominal pain pose a diagnostic challenge. Delay in diagnosis may result in significant risk to the fetus. The preferred diagnostic modality is magnetic resonance imaging (MRI), since ultrasonography is often inconclusive and computed tomography (CT) would expose the fetus to ionizing radiation. The objectives of this study is to describe the process in setting up an around the- clock MRI service for diagnosing appendicitis in pregnant women and to evaluate the contribution of abdominal MR in the diagnosis of acute appendicitis.

Methods

We conducted a retrospective study of consecutive pregnant women presenting with acute abdominal pain over a 6-year period who underwent MRI studies. A workflow that involved a multidisciplinary team was developed. A modified MRI protocol adapted to pregnancy was formulated. Data regarding patients' characteristics, imaging reports and outcome were collected retrospectively.

Results

Forty-nine pregnant women with suspected appendicitis were enrolled. Physical examination was followed by ultrasound: when positive, the patients were referred for MR scan or surgery treatment; when the ultrasound was inconclusive, MR scan was performed. In 88% of women appendicitis was ruled out and surgery was prevented. MRI diagnosed all cases with acute appendicitis and one case was inconclusive. The overall statistical performance of the study shows a negative predictive value of 100% (95%CI 91.9–100%) and positive predictive value of 83.3% (95%CI 35.9–99.6%).

Conclusion

Creation of an around-the-clock imaging service using abdominal MRI with the establishment of a workflow chart using a dedicated MR protocol is feasible. It provides a safe way to rule out appendicitis and to avoid futile surgery in pregnant women.