patients in both groups were discharged appropriately and there were no delayed or missed diagnoses of appendicitis at 1-month follow-up.

Study conclusions

Opioid analgesia did not improve the diagnostic performance of U/S and had no apparent effect on the surgeons' ability to identify surgical pathology.

Commentary

This study is interesting from 2 perspectives. First, it suggests that opioid analgesia does not increase the risk of delayed or missed diagnosis of appendicitis and does not influence the rate of unnecessary laparotomy. Second, it suggests that U/S is less sensitive, less specific, and less accurate than clinical judgement. In this study, the positive and negative likelihood ratios for U/S were, respectively, 1.87 and 0.45. A test with these parameters is both a weak negative and a weak positive predictor. For example, given a hypothetical "grey-zone" patient with pre-test probability of 50%, a negative U/S would decrease (post-test) probability to approximately 30%, while a positive U/S would increase (post-test) probability to only 65%. In both cases, this offers little help to the clinician. These data suggest that greater dependence on U/S in this setting is likely to increase, rather than decrease diagnostic error.

These results are consistent with 3 other studies,[1–3] which found no change in diagnostic accuracy or morbidity in patients receiving opioids; however, they contrast slightly with a fourth study, which also reported no missed diagnoses among opioid recipients, but found an increased rate of unnecessary laparotomy in the placebo group. The authors of this study[4] calculated a number-needed-to-treat (with opioids) of 8.33 to prevent a negative laparotomy.

While all 5 studies combined include just over 600 patients, none have shown a trend toward missed diagnoses or significant diagnostic delays in patients receiving opioid analgesics. Therefore, the weight of the evidence supports judicious analgesic use in ED patients being evaluated for suspected surgical abdominal pain.

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