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Introduction

Abdominal pain is a common complaint in children with multiple pathologies ranging from malrotation, Meckel's diverticulum etc.

Appendicitis is a common surgical complaint with 8%¹ of all people having lifetime risk, one peak occurs aged between 10 and 30 years old². Accurate diagnosis can be challenging³, first line investigation in children other than blood tests includes ultrasound. Many research studies show varying sensitivities and specificities, however, many of these research studies include adult patients.

Aim

To determine whether ultrasound findings correlated with surgical findings in the Hull University Teaching Hospital NHS Trust

Methodology

This was a retrospective audit carried out between 1st January 2020 to 31st December 2021 of patients aged between 0 and 16 years in our NHS Trust.

The sample consisted of a sample size of 132 patients aged between 0 and 16 years old. These children all had an ultrasound and were then followed up by a surgical review which consisted of a surgical assessment and clinical correlation to determine if to proceed to surgery.

Findings

Of the 132 children studied, 29 children had surgical findings of appendicitis. There were 21 true positives, 1 false positive, 8 false negatives and 102 true negatives

using abdominal ultrasonography for children with suspected right iliac fossa (Table 1.0). Using an abdominal USS scan for children with right iliac fossa, the diagnostic accuracy 93%, sensitivity 72%, specificity 99%, positive predictive value (PPV) 94% and negative predictive value (NPV) 95%.

Table 1: 2 x 2 table showing validity of the abdominal USS in appendicitis in children in our trust

Variables	Appendicitis	No appendicitis	
Abdominal USS positive	(True positive) 21	(False positive) 1	PPV 94%
Abdominal USS negative	(False negative) 8	(True negative) 102	NPV 95%
	Sensitivity: 72%	Specificity: 99%	Accuracy: 93%

Conclusion

This study has shown that there is high diagnostic accuracy for acute appendicitis using abdominal USS as shown in similar studies.⁴⁻⁶

References

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