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Correlation of clinico – histopathological findings in different forms of appendicitis

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Abstract

Background: Appendicitis even though being the most common cause of surgical abdomen, its diagnosis remains an enigmatic challenge.

Aim: This study aims to prove whether the clinical, investigative and operative findings correlate with histopathological findings of both acute and chronic forms of appendicitis.

Materials and Methods: The study was conducted on 64 patients admitted in P K Das Institute of Medical Sciences, diagnosed of having appendicitis and underwent appendectomy during period of 18 months from July 2018 to December 2019.

Results

- 64% of cases were seen in age group 10-30 years
- Rate of appendicular perforation was 7.8%
- Significant association was found between clinical findings (previous history of pain abdomen) and histopathological findings of chronic inflammation of appendix.
- Sensitivity of clinical judgment and ultrasonogram to diagnose appendicitis was found to be 93.6% and 80.9% respectively.
- Sensitivity of operative findings to detect appendicitis was only 58.7%.
- Negative predictive value of operative findings to identify appendicitis was only 3.7%.

Conclusion: The diagnostic accuracy of the surgeon is directly dependent on the surgeon's expertise and there is no substitution for an experienced surgeon's judgment. Ultrasonography is a useful tool in avoiding negative appendectomy rates particularly in females and should be used in cases with equivocal clinical findings. Ultrasonography has limitation of variable reliability and operator dependency.

If surgeon encounters a normal looking appendix per-operatively in a clinically diagnosed case of appendicitis still appendectomy should be done.

Keywords: Appendectomy, ultrasonography, histopathology

Introduction

Appendiceal disease is a frequent reason for emergency hospital admissions and appendectomy is one of the most common emergency procedures performed.

It appears that progression to perforation is not predictable and that spontaneous resolution is common ^[1].

The existence of recurrent and chronic appendicitis is still not universally accepted.

The diagnosis of appendicitis is essentially clinical, however a decision to operate based on clinical suspicion alone can lead to removal of a normal appendix in 15-30% of cases ^[2].

Materials and Methods

Inclusion criteria – Patients who were admitted in P k das institute of medical sciences with pain abdomen, diagnosed of having appendicitis after clinical examination and ultrasonography and underwent appendectomy were included in this study.

Exclusion criteria- patients who refused surgery

The clinical, Sonological, operative and histopathological findings were correlated.

Results

Age incidence – 64% cases were seen in age group – 10 to 30years.

Sex incidence – Male to Female ratio 1.28:1

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Clinical features -- Pain abdomen was seen in 100% of the patients, Vomiting in 68.8% cases, Fever in 59.4% cases and Right iliac fossa tenderness in 93.8% of the patients.

USG showed positive findings in 79.7% of cases but in 20.3% of cases USG was equivocal.

- Sensitivity of clinical examination to diagnosis appendicitis was 93.6%
- Specificity of these diagnostic modalities could not be assessed in this study
- Significant association between past history of appendicitis and histopathological findings of chronic appendicitis was found.
- Among 25 patients who had no past history suggestive of appendicitis, 76% showed positive histopathology for acute appendicitis while 24% showed chronic appendicitis.
- Among 39 patient who had past history suggestive of appendicitis 84.6% patients showed features of chronic inflammation in histopathology while 12.8% showed acute inflammation and 2.6% showed normal appendix.

Association between Operative findings and histopathology.

- Sensitivity of operative findings to identify inflammation of appendix was only 58.7%.
- Out of 27 patients where appendix appeared normal peroperatively, only 1 case had histopathologically normal appendix. So, negative predictive value of operative findings to identify appendicitis was only 3.7%.

Discussion

- A recent study of treatment of acute appendicitis with antibiotics alone showed that 95% of the cases resolve with antibiotics alone but 35% out of those develop recurrence within 17.2 months ^[3].
- Male to Female ratio in this study was 1.28:1. A study conducted by Addiss DG, Shaffer N, Fowler BS, et al showed male to female ratio of 1.2 to 1.3:1 ^[4,5].
- Sensitivity of USG in diagnosing appendicitis was found to be 100% in a study conducted by Wilson EB, Cole JC, Nipper ML, et al. In our study, it was only 80.9% compared to 93.6% for clinical judgement.
- It can be stated from our study, that a grossly inflamed appendix noted per-operatively is more likely to be acutely inflamed in histopathology. But, a normal looking appendix per-operatively may not be normal in histopathology and is more likely to be chronically inflamed than acute.

Conclusion

- This study included 64 patients who were diagnosed of having appendicitis and underwent appendectomy.
- From this study, we conclude that there is a significant association between presence of past history suggestive of appendicitis and chronically inflamed appendix histopathologically.
- Clinical judgement has higher sensitivity in diagnosing appendicitis when compared to ultrasonography. However, Ultrasonography can be helpful in avoiding negative appendectomies particularly in females.
- Significant association was not found between non-inflamed appendix per-operatively and histopathologically normal appendix. So, it can be stated that even if surgeon encounters a normal looking appendix per-operatively in a diagnosed case of appendicitis, still appendectomy should be done.
- The generalization of findings from our study needs to be confirmed with other Research centers.

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