Original Article

Dry Lips as a Possible New Clinical Sign in Diagnosis of Appendicitis in Adults: A Short Report

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Abstract

Background: Appendicitis is one of the most common causes of emergency abdominal surgery. Diagnosis before surgery has always been a problem. One of the symptoms in dealing with patients with suspected appendicitis is dry lips. Therefore, in this study, an attempt was made to investigate the relationship of this sign with appendicitis.

Methods: This cross-sectional study was conducted in a one year period. All the patients between 18 and 65 years of age with complaints of abdominal pain were included into the study. Possible diagnosis was appendicitis based on history, clinical examinations, and laboratory tests. Pathological results were recorded. Collected data were analyzed by descriptive statistics using SPSS-16 software.

Results: In this study, 125 patients with preoperative diagnosis of appendicitis were evaluated. Mean age was 27±2 years and 65% (n=81) were male and 35% (n=44) were female. Final diagnosis based on pathologic examination revealed that 88.8% (n=111) were appendicitis cases and 11. 2% (n=14) were cases with normal appendix. Also, 92.79% (n=103) of patients who had appendicitis based on pathologic report had dry lips in preoperative examination and 21.24% (n=3) of patients with normal appendix in pathology had dry lips in perioperative examination. Sensitivity of dry lips was 92.79% and specifity was 78.57%.

Conclusion: Early diagnosis and appendectomy before gangrene or rupture of the appendix will reduce complications of this disease. Therefore, early diagnosis of this disease is important. Based on this study, it is concluded that dry lips can be a diagnostic sign along with other signs.

Keywords: Adults, Appendicitis, Dry lips

Introduction

Abdominal pain is a major cause of hospital visits accounting for about 10 % of 62 million visits per year by adults who present at an Emergency Department (ED) for non-injury causes (1). Acute appendicitis is the most common abdominal emergency requiring surgery with an estimated lifetime prevalence of 7% (2). Although a very common and long-known phenomenon, appendicitis remains a diagnostic challenge for surgeons and emergency physicians. Clinical diagnosis alone leads to a negative appendectomy rate of 15 to 30%.The diagnosis is specially challenging for women of fertile age (3). Since symptoms often overlap with other conditions, the fundamental clinical decision in the diagnosis of a patient with suspected appendicitis is whether to operate or not (4). The meaningful evaluation of acute appendicitis balances early operative intervention in hopes of preventing perforation against a more restricted approach with the hope of reducing the risk of unnecessary surgery. Additionally, physicians must consider the accuracy, delay-to-surgery, and radiation risks of using Computed Tomography (CT) imaging, as well as the reliability of laboratory results and clinical scoring systems. Early surgical intervention is the traditional gold standard for preventing appendicular perforation. High rate of unnecessary negative appendectomies, however, leads to unnecessary morbidity and even mortality (5). Amouei *et al* (6) examined this sign in children among which 88% of patients with acute appendicitis had dry lips. The aim of this study, based on prospectively collected data of adult patients, was to introduce a possible new clinical sign in patients with appendicitis.

Materials and Methods

This cross-sectional study was performed at Imam Hossein Hospital in Tehran between 2019-2020.All patients between 18 to 60 years of age with complaint of abdominal pain were included in the study. Possible diagnosis was appendicitis based on history, clinical examination, laboratory tests and pathological results were recorded. Collected data were analyzed by descriptive statistics using SPSS_16.

Results

In this study, 125 patients with preoperative diagnosis of appendicitis were evaluated. Mean age was 27±2 years and 65% (n=81) were male and 35% (n=44) were female. Final diagnosis based on pathologic examination revealed that 88.8% (n=111) were appendicitis cases and 11. 2% (n=14) were cases with normal appendix. Also, 92.79% (n=103) of patients who had appendicitis based on pathologic report had dry lips (Figures 1and 2) and 21.24% (n=3) of patients with normal appendix in pathology had dry lips in perioperative examination. Sensitivity of dry lips was 92.79% and specifity was 78.57%.

Figure 1. Dry lips in a patient with acute appendicitis.

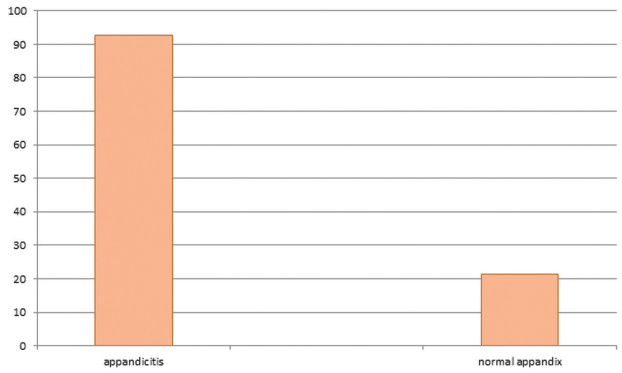

Figure 2. Percentage of dry lips in appendicitis cases and normal appendix cases.

Discussion

The lifetime risk of appendicitis is 8.6% for males and 6.7% for females with an overall prevalence of 7% worldwide. The incidence of acute appendicitis has been declining steadily since the late 1940s, and the current annual incidence is 10 cases per 100,000 population. Although a very common and long-known phenomenon, appendicitis remains a diagnostic challenge for surgeons and emergency physicians. A negative appendectomy can lead to severe morbidity and even mortality. Even without complications, it is associated with unnecessary disability and costs (7). Despite the increasing availability

of ultrasonography and CT, clinical examination remains the cornerstone of the diagnostic process when patients present with right lower quadrant pain (8). Physical examination may reveal signs of peritoneal irritation in the right lower quadrant or diffuse abdominal pain. In addition, other symptoms such as Obturator sign, Psoas sign, or Rovsing's sign may be associated with appendicitis depending on the location of the inflamed appendix. However, these indications are only weakly predictive of appendicitis (9). Other diagnostic strategies include the use of scoring systems, of which the Alvarado score, derived from retrospectively collected data from 305 adult patients in the mid-1980s, is the best known clinical prediction rule for estimating the risk of appendicitis (10). A systematic review of published data showed that the score is most useful in ruling out appendicitis, and a score below 5 has a sensitivity of 94–99% for rejecting the presence of appendicitis (11). However, a recent study performed at two academic urban EDs in the United States criticized the low sensitivity of 72% for the low risk Alvarado score as insufficient to safely discharge patients without additional diagnostic testing (12). In this prospective study, the association of acute appendicitis with dry lips had a sensitivity of 92.79% and specifity was 78.57% when compared with other common causes of acute right abdominal pain. This rate is higher than the frequency of other clinical, laboratory, or radiological signs associated with acute appendicitis. In conclusion, early diagnosis and appendectomy before gangrene or rupture of the appendix will reduce complications of this disease. The results of the present work suggest that the presence of dry lips, as a useful sign, can be associated with acute appendicitis.

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