Acute Nonspecific Abdominal Pain – Update 2006

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Definition and Epidemiology

Nonspecific acute abdominal pain (NSAP) is a significant problem in general surgery and accounts for up to an estimated 40% of all emergency surgical admissions [14]. It is defined as a condition of acute abdominal pain of less than 7 days’ duration in which, after examination and (radiological and laboratory) investigations, the diagnosis still remains uncertain [6, 7, 19]. The diagnosis is important in order to avoid an unnecessary laparotomy (as high as 29%) and/or in order to plan the right abdominal incision [1, 6, 7, 17, 19]. With the traditional “wait-and-see management” the mean hospital stay for patients admitted with a NSAP ranges between 4 and 6 days, which it is costly owing to the repeated clinical, radiological and laboratory investigations [1, 10, 12, 14].

Diagnosis

The accuracy of conventional radiography in NSAP, although considered an essential part of the patient’s workup, reaches only 50%, whereas that of abdominal ultrasound is 60–89%. The CT scan is more accurate (84–98%) but is expensive and is not always possible to perform in all hospital situations, 24 h a day [2, 10, 13, 14, 18, 19]. A delay in surgical intervention while further investigations are performed may increase morbidity and prolong hospital stay (average delay period of 6.12 days), especially if it is taken into account that patients admitted with NSAP might be old, obese, critically ill and with comorbidity situations (such as diabetic and immunosuppressive therapy) [6, 10, 11].

Operative Versus Conservative Treatment

When patients are admitted to hospital with acute abdominal pain, clinicians, irrespective of a specific diagnosis, select three diagnostic classes: operation definitely required; operation definitely not required, need for operation uncertain [12, 17].
Choice of Surgical Approach and Procedure

If a surgical exploration is required, and if there are no absolute contraindications to the approach, a laparoscopic exploration should be preferred [1, 4, 7]. This is due not only to its diagnostic value/accuracy (89–100%) but also to the potential—which is mainly related to the human factor (surgeons’ skills)—for therapeutic manipulation during the same setting (up to 88.2%) (or to plan the right abdominal approach) [1, 6–8, 10, 14, 19, 21]. It is reported in the literature that with an open approach such as in suspected appendicitis, the accurate on-table diagnosis is missed in up to 14.3% of cases and that the sensitivity for diagnosing normal appendices is low at 51.3%, thus suggesting that almost half of normal appendicitis cases might be misdiagnosed as pathological, with the risk of no further exploration for other pathologies [17, 20, 22]. As already described, laparoscopic surgery is advantageous for many abdominal diseases, which may also turn out to be the underlying cause of the hospital admission. Thus, especially in lower abdominal and pelvic pain among female patients during their reproductive years, a laparoscopic approach might lead to correction of an erroneous preoperative diagnosis in up to 40% of cases and/or exclude other pathologies (which may be present in approximately 20% of cases) [3, 6, 16, 22].

To undertake emergency laparoscopic operations, the surgeon must be experienced [1, 6]. A possible small operating theatre together with the wide variety of therapeutic findings require a well-trained and experienced surgeon as well as a well-trained surgical team. Mastery of two-handed dissection is suggested, as laparoscopic suturing technique has to be considered as an absolute requirement. Good judgment is needed for a timely decision to convert the procedure (and plan a “target” incision) in order not to jeopardize and prolong the attempts to complete the operation laparoscopically [1]. The morbidity (0.6–24%) and mortality (less than 1%) of a laparoscopic approach in an emergency situation are comparable if not lower than those reported with laparotomy, and converted cases (up to 16%) have a similar outcome compared with primarily open cases [1, 6, 8, 9].

As stated by the controlled trials in which an early laparoscopy is compared with observation for NSAP, diagnostic laparoscopy benefits patients by avoiding unnecessary surgery, avoiding a possibly deleterious delay in diagnosis and treatment, shortening the operative and hospitalized period and reducing the readmission rate and helps in containing health-care costs [5, 7, 9, 15] (EL 1b). On the basis of these data, it seems justified to lower the threshold for surgical exploration when using laparoscopy rather than laparotomy [1, 4]. However, it has to be kept in mind that laparoscopy provides only an alternative not a substitute for traditional diagnostic and clinical procedures and will never lessen the importance of a needed conventional laparotomy.