CHAPTER I

INTRODUCTION

1.1 Rationale and background

Fistula in ano is a common disease in colorectal clinic. There are about 100 cases operated yearly in King Chulalongkorn Memorial hospital. This disease denotes the chronic phase of anorectal sepsis, which usually causes by cryptoglandular infection [1]. It is characterized by chronic purulent drainage or cyclical pain associated with abscess reaccumulation followed by intermittent spontaneous decompression. This is the natural history in up to 50 percent of perianal abscesses and is a result of persistent anal sepsis and/or an epithelialized track between perianal skin and anal canal (fistula formation) [2,3].

There are many types of fistula in ano depending on depth of the tract relative to the anal sphincter muscles. According to Parks classification, fistula in ano can be classified into 4 types; intersphincteric, low transsphincteric, high transsphincteric, suprasphincteric and extrasphincteric type [4].(Fig.1)

The term "complex" fistula is a modification of the Parks classification, which describes fistulas whose treatment poses a higher risk for impairment of continence. An anal fistula may be termed "complex" when the track crosses >30 to 50 percent of the external sphincter (high-transsphincteric, suprasphincteric, and extrasphincteric) [5]. Most of the cases (80 percent), however, are simple fistula (intersphincteric, low transsphincteric) [4].

The goals in the treatment of fistula-in-ano are 1) to eliminate the septic foci and any associated epithelialized tracks, and 2) to do so with the least amount of functional derangement. There is no single technique appropriate for the treatment of all fistulas-in-ano and, therefore, treatment must be directed by the surgeon's experience and judgment, especially in case of complex fistula, one should keep in mind the progressive tradeoff between the extent of operative sphincter division, postoperative healing rates, and functional detriment [6]. According to this principle,

various techniques of sphincter preserving operation are applied to treat the complex fistula [7-14].

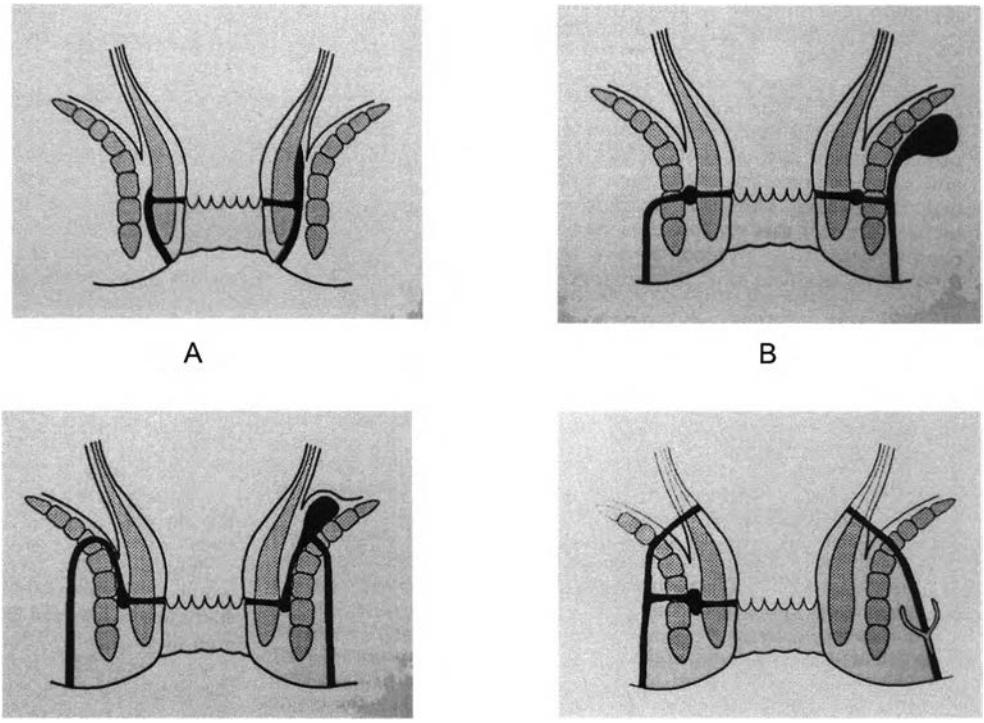
Majority of fistula in ano are simple type which many techniques were described in the literatures such as fistulotomy, fistulectomy, and fistula track debridement with fibrin glue injection, etc. Despite fibrin glue is an easy and repeatable treatment for fistula in- ano with relatively few side effects and little to no risk of fecal incontinence, successful healing rates, however, can be achieved only 60 percent [13, 14] and the cost of fibrin glue is relatively high compare to fistulotomy.

Fistulotomy is preferable to fistulectomy. Despite of similar recurrence rates, the latter results in larger wounds with a longer healing time and higher rates of incontinence [15]. The recurrence rate for fistulotomy is generally between 2 and 9 percent with a functional impairment generally between 0 and 17 percent [16, 17].

Despite of good results, most patients are suffered from fistulotomy wound such as perianal pain and wound complication especially in the early period after the operation. Perianal wound pain is not only the undesirable condition for patients but it may also result in early postoperative complication, urinary retention and urinary tract infection for the example. Raw surface of fistulotomy wound may cause some problems because this technique leaves unepithelized area that has a potential for postoperative bleeding [18].

Marsupialization of fistulotomy is another accepted treatment for simple fistula in ano. It is defines as a technique of suturing wound edge to the fistula tract after fistulotomy. (Fig 2) Although this technique was performed for many decades, few series were reported in the literature [19-22] and there was only 1 randomized, controlled trial studying on wound healing and anal squeeze pressures. The results of this study showed no disadvantage of this technique compared to simple lay open (fistulotomy) technique [22].

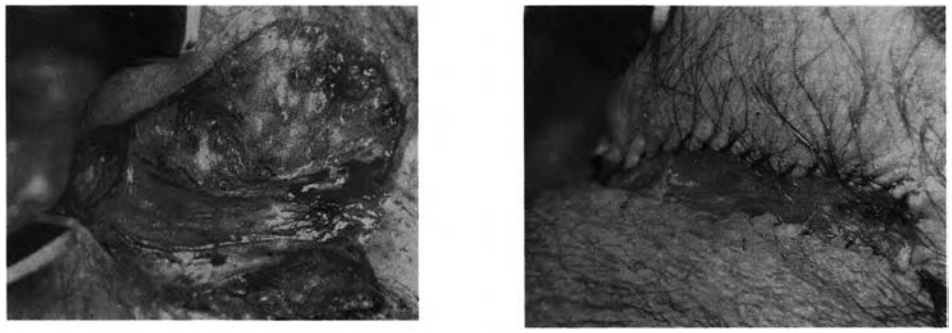
For the reason that this technique results in smaller surgical wound and less raw unepithelized area to be exposed, it may results in lower perianal pain and wound complication. However, up to present, there is no study that compares postoperative perianal pain and wound complication between fistulotomy and fistulotomy with marsupialization.



A B

C D

Figure 1. Parks classification. A, intersphincteric type. B, transphincteric type. C, suprasphincteric type. D, extrasphincteric type



A B

Figure 2. Surgical techniques for simple fistula. A, fistulotomy alone. B, fistulotomy with marsupialization. It is defines as a technique of suturing wound edge to the fistula tract after fistulotomy.

1.2 Literature review

Literature search strategy

The literature search strategy used to locate the information in this review is the PubMed reference database and additionally going through the reference list of other articles. The search terms used were "fistula in ano AND fistulotomy". The most recent time that the articles were retrieved from PubMed was on September 6th, 2005, and there were 126 articles with 9 review articles. When the search terms were combined with "AND (marsupialization OR marsupialization)", 4 articles were retrieved including 1 RCT.

There were12 articles when the search terms used were "visual analogue AND pain AND postoperative" with limit the publication to review and English language.

Indications for operation for fistula-in-ano

The presence of a symptomatic fistula in ano is an indication for operation, for spontaneous healing of fistula in ano is very rare. Neglected fistulas may result in repeated abscesses and persistent drainage with its concomitant morbidity. Very rarely, malignancy may supervene on a long standing fistula. Therefore operation should be recommended unless there are specific medical contraindications to the use of anesthesia [2,3,23].

The objective of fistula surgery is simple cure the fistula with the lowest possible recurrence rate and with minimal alteration in continence status. To approximate this ideal, a number of principles should be observed: (1) the primary opening of a tract must be identified; (2) the relationship of the tract to the external sphincter muscle must be established; and (3) division of the least amount of muscle in keeping with cure of the fistula should be practiced [6,23].

Classification and treatment

Most common cause of fistulas is cryptoglandular in origin (anal gland infection). Spread of infection will pass through intersphincteric plane and become various types of fistulas. A number of authors have made significant contributions to the study of fistula anatomy. Eisenhammer stressed the importance of the

intersphincteric plane, both in the pathogenesis and spread of a fistula. Steltzner classified fistula in ano into three main types; intermuscular, transphincteric, and extrasphincteric. Lillus further developed the concept of intermuscular spread, in particular, extension upward into the rectal wall [23]. Finally, Parks, Gordon, and Hardcastle classified the fistula in ano into 4 types; intersphincteric, transphincteric, suprasphincteric and extrasphincteric type [4].

There are various surgical techniques depended on type of the fistula. For an example, the complex fistula (suprasphincteric and extrasphincteric type), techniques of sphincter preservation are needed that may cause differences in results [7-14]. For the simple fistula (intersphincteric and low transphincteric type), there are various kinds of operation but fistulotomy is still a standard surgical technique (Level of Evidence: Class II; Grade of Recommendation: B) [6] with an average 95 percent cure rate. After fistulotomy, perianal wound was left opened and wait for spontaneous healing. Unfortunately, many patients were suffered from perianal wound pain and some patients developed postoperative complication related to surgical wound such as urinary retention, urinary tract infection, bleeding, and wound infection [24,25].

Marsupialization of fistulotomy wound was another accepted technique for simple fistula that was reported in the literature for decades [19-22]. Although there are very few series studying in marsupialization for fistula in ano, there is 1 RCT that was proved equally in prevention of recurrence compares to fistulotomy alone [22]. Despite of this article, there is no sufficient data about its efficacy in postoperative pain reduction which is, recently, counted to be one of the major detriment outcomes for the patients after surgery.

Pain assessment tool selection

The visual analogue scale (VAS) is chosen, based on its methodological qualities of reliability, validity, sensitivity and appropriateness for postoperative pain assessment after surgery. The use of the VAS as a pain measurement tool benefits the respondent, as it uses few words and, therefore, vocabulary is less of an issue [26]. Provided that clear instructions are given to respondents, it is reasonably simple to complete [27]. Furthermore, for the assessor [28]:

- it is easy and brief to administer and score;

- it is a good method of expressing pain severity;

- because it has the properties of a ratio scale it has a true zero point and, thus, differences between VAS measurements can be interpreted as meaningful percentages;

• it has a continuous frequency distribution, which allows rigorous statistical tests to be conducted on average pain levels.

A study by Collins et al. compared a VAS with a four-point verbal descriptor scale, VDS (with categories labeled 'none', 'mild', 'moderate' or 'severe') in an attempt to establish which point on the VAS represented moderate pain intensity. It was found that VAS scores could be mapped onto the VDS, in that the majority of patients recording a baseline VAS score in excess of 30 mm selected 'moderate' or 'severe' on the categorical scale. In their view, a VAS score in excess of 50 mm would, be likely to equate to severe pain [29].

A study by Clarke and Spear found the VAS to be sensitive to changes in self-assessed well-being. It has also been demonstrated that it is sensitive to all procedures which alter the experience of pain, e.g. the use of pharmacological interventions, and changes in intensity in a variety of patients with acute or chronic pain [28].