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# Combined Surgical Correction and Intense Pulse Light (IPL) Depilation for Recurrent Pilonidal Sinus; Mansoura Experience

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## ABSTRACT

Objective: To evaluate the efficacy and the safety of intense pulse light (IPL) hair removal after surgical intervention in the treatment of recurrent cases of pilonidal sinus (PS).

*Patients and Methods:* The study included 34 patients with recurrent PS were treated with IPL device for hair removal between June 2009 and November 2010.

*Results:* A total 34 patients (23 males and 11 females) with recurrent PS underwent surgical correction and IPL depilation. Patients required from 3 to 8 IPL therapy sessions with 5±1 weeks intervals. The mean follow up was 3.8 months. No major morbidity was reported; only 4 patients presented with pigmentation and 3 patients suffered from folliculitis that were managed by antibiotics only. Three patients were lost in the follow-up period. Improvement was achieved in all cases with progressive loss of hair in the intergluteal cleft. All patients were satisfied with no recurrence.

*Conclusion:* Our results emphasize on the efficacy and the safety of IPL depilation in the treatment of the recurrent PS.

## INTRODUCTION

Pilonidal sinus (PS) is a painful chronic disease that mainly affects the sacrococcygeal region **[1]**. Treatment options of PS are controversial and can include excision and packing, excision and primary closure, marsupialization and flap techniques **[2]**. Excessive hair in and around the gluteal cleft increases the risk of the recurrence of pilonidal sinus and the frequency and severity of recurrences are directly proportional to the density of the hair present on the buttocks **[3]**. Efforts to reduce recurrence of PS have focused on strategies of hair removal in the intergluteal cleft. Electrolysis, depilatories and shaving the area have been used to achieve hair removal with some success. These techniques offer only short-term solutions, are associated with poor compliance and a persistently high recurrence rate **[4]**. In recent years, reports of laser and light-based devices depilation in the PS have shown beneficial effect by decreasing the risk of recurrent PS **[5-11]**.

After thorough review of literature, the use of the intense pulse light (IPL) hair removal in the treatment of PS has not been well studied. So, the aim of this study is to evaluate the efficacy and the safety of IPL hair removal after surgical intervention in the treatment of recurrent PS.

## PATIENTS AND METHODS

This study was conducted on 34 patients aged from 19 to 43 years with a history of recurrent pilonidal sinus between June 2009 and November 2010. Inclusion criteria are patients that with dark hair in the natal cleft with a Fitzpatrick skin type III and IV. While, the exclusion criteria are patients with light colored hair and patients with no follow-up. All of our patients underwent a surgical correction by the same surgeon. After complete healing of the surgical wound that ranged from 21 days to 32 days, they were treated with the intense pulse light device (IPL) (SDC II, Angelite, China) with wavelength ranging from 700nm to 950nm and the following parameters: Fluence 10-15 J/cm$^2$, pulse duration 5-6 milliseconds and a 20-30 milliseconds delay (Fig. 1). All IPL sessions were performed by the same surgeon on an outpatient basis. Marking was done and the hair was removed in a rectangular area 10 x 6 cm around the surgical repair area. None of the patients required anesthesia except 2 patients that received local anesthetic cream one hour before the procedure. The protective eyewear is required for surgeon, assistant and the patients. The time of the IPL session was less than 10 minutes. Treatment was performed at 4-6 weeks intervals until there was no visible hair in the treated area. All patients were assessed for thermal injury

and pigmentation changes at the end of each session and at each subsequent follow-up. After completion of IPL therapy, patients were evaluated for recurrence. Recurrence is defined as persistent abscess, sinus, or cellulitis in the intergluteal cleft after completion of IPL therapy.

Fig. (1): Intense pulse light device (SDC II, Angelite).

Table (1): Patient's data.

| No. | Age (y) | Sex | No of previous operations | No of IPL sessions | Follow-up period (m) | Outcomes |
|---|---|---|---|---|---|---|
| 1 | 38 | M | 3 | 5 | 3 | |
| 2 | 36 | M | 3 | 4 | 3 | |
| 3 | 27 | F | 1 | 6 | 5 | |
| 4 | 43 | M | 4 | 6 | 4 | |
| 5 | 29 | M | 2 | 5 | 5 | Pigmentation changes |
| 6 | 35 | M | 2 | 6 | 4 | |
| 7 | 32 | M | 2 | 8 | 6 | Folliculitis (after 3rd session) |
| 8 | 26 | F | 3 | 7 | 4 | |
| 9 | 31 | M | 1 | 6 | 3 | |
| 10 | 26 | F | 2 | 3 | – | Missed |
| 11 | 26 | M | 2 | 5 | 4 | Folliculitis (after 2nd session) |
| 12 | 39 | M | 3 | 5 | 3 | |
| 13 | 24 | F | 2 | 3 | – | Missed |
| 14 | 21 | F | 1 | 5 | 6 | |
| 15 | 27 | M | 2 | 5 | 3 | |
| 16 | 37 | M | 2 | 4 | – | Missed |
| 17 | 22 | F | 2 | 6 | 6 | Pigmentation changes |
| 18 | 28 | M | 1 | 4 | 5 | |
| 19 | 32 | M | 2 | 4 | 4 | |
| 20 | 43 | M | 2 | 8 | 3 | |
| 21 | 21 | M | 1 | 6 | 3 | |
| 22 | 43 | F | 2 | 6 | 6 | |
| 23 | 28 | F | 1 | 5 | 3 | Pigmentation changes |
| 24 | 31 | F | 1 | 6 | 4 | |
| 25 | 34 | M | 2 | 6 | 3 | |
| 26 | 30 | F | 2 | 6 | 4 | Pigmentation changes |
| 27 | 26 | M | 1 | 5 | 3 | |
| 28 | 33 | M | 1 | 4 | 3 | |
| 29 | 29 | M | 1 | 6 | 3 | |
| 30 | 27 | M | 1 | 4 | 4 | Folliculitis (after 2nd session) |
| 31 | 22 | M | 1 | 6 | 3 | |
| 32 | 37 | M | 3 | 6 | 3 | |
| 33 | 22 | M | 1 | 5 | 3 | |
| 34 | 19 | F | 1 | 4 | 3 | |

## RESULTS

Intense pulse light hair removal procedure was performed on 34 patients with recurrent PS. The follow up period ranged from 3-6 months with a mean of 3.8 months. There were 23 males (67.6%) and 11 females (32.4%). Their ages ranged from 19-43 years with a mean of 29.9 years. The number of IPL sessions ranged from 3 to 8 sessions for complete hair removal with a mean of 5.3 sessions (Table 1). Progressive hair reduction was done with an IPL treatment with no further surgical intervention for any of the patients. All of the patients had no signs of infection in the epilated area. No adverse effects of IPL were reported except temporary pigmentation in four patients that completely relieved within 48 hours. Three patients suffered from folliculitis; one of them after the 3rd session and the others after the 2nd session and they were treated with antibiotics only. Three patients were lost after receiving 3, 3 and 4 sessions. Four females were uncomfortable from the lying position during the procedure. Improvement was achieved in all patients and they were very satisfied with the final results.

## DISCUSSION

Pilonidal sinus disease is a frustrating condition because of a high recurrence rate. The disease is more common in men and frequently occurs between puberty and age 40. It is also common in obese people and in those with thick, stiff body hair. Symptoms vary from small dimple to a large painful abscess **[12]**.

The treatment of PS consists of both medical and surgical approaches. Medical treatment such as oral antibiotics associated with meticulous and frequent shaving of the area may be enough to resolve and prevent mild cases of PS **[13]**. While the surgical treatment required for case of well formed pilonidal cysts and abscesses which includes marsupialization, curettage and wide deep excision of diseased tissue. The excisional site is either left open to heal by 2nd intention, closed primarily or reconstructed by skin graft or flap **[14]**.

The cause of this disease has not been totally clarified but deep infection of the hair follicles in the area is a common and triggering factor. Long-lasting hair removal with laser and light-based devices would eliminate the hair and consequently the possibility of infection **[11]**.

The use of the depilating lasers and light-based devices for treatment of the PS is a relatively new modality. In this study, our results reported that the IPL hair removal in the PS reduces the hair growth and decreases the risk of recurrence. The advantages of the IPL hair removal includes; 1) safe, easy and quick, 2) nearly painless, 3) performed in the outpatient, 4) done almost always without local anesthesia, 5) simple to teach, 6) cheaper than laser, 7) No long lasting morbidity. On the other hand, the patient's compliance for multiple sessions requirements is one of the disadvantages of this procedure. While, the posture employed in the procedure is rather embarrassing especially in females which is regarded as a common disadvantage in our society.

*Recommendation:*

We support the routine of the IPL hair removal as a simple outpatient procedure that offers satisfactory results and low risk of recurrence in the treatment of pilonidal sinus.

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