

# Alternative treatment of gluteofemoral fistulas using honey: a case report

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## ABSTRACT

Perianal fistula is a common disease that affects particular patients with inflammatory bowel disease. Honey has been used as a natural remedy for centuries for the treatment of various disorders. We report a patient with persistent fistulas, in whom conventional medical and surgical therapy failed. In this case, most of fistulas in gluteofemoral region were completely healed and closed after 6 months of treatment with honey. In addition, honey reduced inflammation, pain and induration of affected region. This medical approach positively affected patient's mental condition and also improved his quality of life.

**Key words:** Fistula • Honey • Medical therapy

## Key Points

- perianal fistula is a common disease that affects general population with male preponderance
- perianal fistula occurs either as a component of inflammatory bowel disease or as a consequence of localised infection of the anal crypts and glands
- the main therapeutic options are medical and surgical treatment
- antibiotics were found to display only short-term benefit for patients
- honey has been used as a traditional medicine for centuries by different cultures for the treatment of various disorders and could be one of the promising candidates for local treatment of perianal fistula
- however, the findings of several clinical trials employing honey for treatment of wounds are still contradictory

## INTRODUCTION

Perianal fistula is a common disease that affects general population with male preponderance (1). Perianal fistula occurs either as a component of inflammatory bowel disease or as a consequence of localised infection of the anal crypts and glands.

The first step in successful management is careful assessment. Inspection of the perianal anatomic area and palpation for induration are the most significant methods of assessment. The main therapeutic options are medical

and surgical treatment. Antibiotics are the most commonly used first choice agents for perianal fistula and they are recommended for persistent perianal fistula. However, antibiotics were found to display only short-term benefit for patients (2). In addition, fistula frequently re-occurs once therapy is discontinued (3). There is an urgent need for novel medical therapies with long-term effects.

Honey has been used as a traditional medicine for centuries by different cultures for the treatment of various disorders and could be one of the promising candidates for local treatment of perianal fistula. Honey offers broad-spectrum antimicrobial properties and it promotes rapid wound healing (4). It has been assumed that the antibacterial action of honey has its main impact on the healing process of chronic wounds and burns. Honey eliminates pathogens from wounds and provides an appropriate moist environment for proper wound healing. However, the findings of several clinical trials employing honey for treatment of wounds are still contradictory. Jull and co-workers established that honey-impregnated dressings did not significantly

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improve venous ulcer healing or change incidence of infection, compared with usual care (5). On the other hand, two recent clinical trials suggest that healing times and incidence of infection after treatment with honey are reduced compared to conventional treatment, and the results are of clinical significance (6,7). In this report, we describe an alternative treatment of long-standing gluteal and femoral fistulas in patient who has struggled with them for 10 years. Neither antibiotic therapy nor surgical approach was effective, therefore natural honey was used for treatment.

### CASE HISTORY

A 55-year-old man who had suffered from perianal problems for 10 years was referred to the Department of Surgery with septic shock and massive purulent secretion from gluteal, femoral and scrotal fistulas. Physical examination revealed multiple incisional scars in affected region (Figure 1A,B). He had previous history of ischemic heart disease, infarct myocardium and type 2 diabetes. Crohn's disease was not diagnosed in patient. The patient has been regularly admitted

at the Department of Surgery since 2001 due to presence of the numbers of fistulas and abscesses developed from intramuscular (IM) injection into gluteal area. Owing to failure of conservative non-surgical treatments including daily lavage of the fistulas combined with medication, the patient underwent a sigmoidectomy in 2005 but no improvement was achieved. There were multiple scars in the gluteofemoral region occurred from surgical incision in the past. During the lavage procedure with 3% hydrogen peroxide and Betadine solution, the communication among fistulas in gluteofemoral region was observed.

The initial laboratory test revealed a white blood cell count,  $17.7 \times 10^9/l$ ; haemoglobin 96 g/l and hematocrit 29.1%. Serum chemistry showed elevated C-reactive protein (CRP), 127.5 mg/l.

Subsequently, we initiated the alternative treatment of fistulas with local  $\gamma$ -irradiated honeydew honey possessing strong antibacterial activity. The procedures were performed in accordance with the revised Helsinki Declaration for clinical research involving humans. Subject signed informed consent

### Key Points

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- physical examination revealed multiple incisional scars in affected region
- since 2001 the patient was regularly admitted to the Department of Surgery due to presence of fistulas and abscesses developed from intramuscular (IM) injection into gluteal area
- we initiated the alternative treatment of fistulas with local  $\gamma$ -irradiated honeydew honey possessing strong antibacterial activity



**Figure 1.** The appearance of gluteal and femoral fistulas before (A, B) and after (C, D) application of honey.

## Key Points

- after 10 days of treatment with honey, we observed the reduction of foul-smelling purulent discharge from fistulas
- on day 24, we found out that some of the fistulas in gluteofemoral region were epithelialised with no purulent secretion and the level of CRP decreased to 31.8 mg/l
- this was the first time in 10 years that the patient's local examination had significantly improved
- a home care nurse continued the honey therapy for 40 days after which an MRI of the gluteal regions was performed
- the MRI scan showed the numbers of communicating fistulas in the gluteal region, in particular the left region
- honey therapy was continued and 5 months later an arteriovenous fistula for haemodialysis was done
- at this time, we also examined the progress in treatment of perianal fistulae with honey and found that all regions associated with fistulae were without inflammation and induration; furthermore, fistulas in gluteofemoral left region were completely healed and closed
- it is estimated that approximately 25% of patients with Crohn's disease will develop a perianal fistula during the course of their disease
- we described a case of the patient in whom several perianal fistulae were developed as a result of IM injection into gluteal area
- abscess formation is the most common complication of IM injections
- the primary goal of treating perianal fistulae should be eradication without recurrence
- in this report, the patient with multiple perianal fistulas underwent combined therapy with honey and systemic antibiotics
- local treatment with honey was effective in a reduction of discharge secretion and it speeded up the healing and closure of perianal fistulas
- one possible explanation for the present positive findings is that honey could eliminate residual microorganisms which are partly responsible for chronic inflammation resulting in perianal fistula formation

form for publication of this case report and accompanying images.

Prior to application of honey, the affected area was disinfected with Betadine solution and fistulae were syringed out with 3% hydrogen peroxide, followed by sterile physiological solution. Honey was applied either diluted with sterile physiological solution [50% (w/v) solution] or undiluted, directly to fistulas and large cavities, developed after incisions. Application of honey solution was carried out using sterile syringe. The bandage was changed on a daily basis. Hydrogen peroxide lavage procedure was later omitted due to patient-reported pain symptoms.

During the local honey treatment, the patient was treated with systemic oxacillin and gentamicin, then changed after 7 days based on antibiotic susceptibilities to oxacillin and sulperazon (cefoperazone/sulbactam), and finally to oral benemycin and biseptol on day 18 for another 14 days.

Cultures of fistula secretions were positive for oxacillin-sensitive *Staphylococcus aureus*, *Staphylococcus haemolyticus* and *Escherichia coli*. After 18 days of treatment, the cultures were positive on *Proteus mirabilis*.

After 10 days of treatment with honey, we observed the reduction of foul-smelling purulent discharge from fistulas. Laboratory test revealed the reduced level of CRP (84 mg/l). On day 24, we found out that some of the fistulas in gluteofemoral region were epithelialised with no purulent secretion and level of CRP decreased to 31.8 mg/l. This is the first time in a period of 10 years when patient's local examination was significantly improved. This progress positively affected patient's mental condition and also improved his quality of life. The patient was dismissed from the hospital to home care. A visiting home health-care nurse regularly provided care in order to continue with honey therapy. After 40 days, magnetic resonance imaging (MRI) of both gluteal regions was performed. MRI scan showed the numbers of communicating fistulas in gluteal region, in particular left region. The large fistula in left gluteal region was partially extended into the fascia of gluteus maximus muscle after evacuation of content of abscess. Perianal fistula in right gluteal region was located up to the margin of internal anal sphincter.

Honey therapy was continued. The patient was readmitted 5 months later in order to create an arteriovenous fistula for haemodialysis treatment. At this time, we also examined the progress in treatment of perianal fistulae with honey. All regions associated with fistulae were without inflammation and induration (Figure 1C,D). Fistulas in gluteofemoral left region were completely healed and closed.

## DISCUSSION

The incidence of perianal fistula in European population varies from 1.2 to 2.8 per 10 000 inhabitants per year (1). Crohn's disease is the most common cause of perianal fistulae, followed by infections (tuberculosis, actinomycosis), diabetes mellitus, hidradenitis suppurativa, trauma, radiation, malignancy and rarely, ulcerative colitis or pouchitis. Crohn's perianal fistulas are common and cause considerable morbidity. It is estimated that approximately 25% of patients with Crohn's disease will develop a perianal fistula during the course of their disease (8). One third of patients have recurring anal fistulas and two thirds of them have multiple fistulas (9).

Here, we described a case of the patient in whom several perianal fistulae were developed as a result of IM injection into gluteal area. The incidence of developing a complication from IM injection ranges from 0.4 to 19.3% (10,11). Abscess formation is the most common complication of IM injections (10).

In general, perianal fistula therapy depends on several parameters, such as location, number or severity of symptoms. The primary goal of treating perianal fistulae should be eradication without recurrence. A combined medical and surgical therapy is the main therapeutic options for treatment of perianal fistula. In this report, the patient with numbers of perianal fistulas underwent combined therapy with honey and systemic antibiotics. Local treatment with honey was effective in a reduction of discharge secretion and it speeded up the healing and closure of perianal fistulas. Patient reported no pain in the affected region after therapy with honey. One possible explanation for the present positive findings is that honey could eliminate residual microorganisms which are partly responsible for chronic inflammation resulting in perianal fistula formation.

We used local sterilised honeydew honey which has recently showed excellent antibacterial activity against multi-drug resistant clinical isolates of *Stenotrophomonas maltophilia* (12). In addition, it has successfully been applied in the treatment of ocular infections (13). On the other hand, the use of non-sterile honey for treatment of deep wounds or perianal fistulae is limited because of presence of bacterial spores. We strongly suggest to use only  $\gamma$ -irradiated honeys for medical purposes. In our case, the use of honey was successful achieving an excellent result on the treatment and quality of patient's life.

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## Key Points

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- the use of non-sterile honey for treatment of deep wounds or perianal fistulae is limited because of presence of bacterial spores
- we strongly suggest to use only  $\gamma$ -irradiated honeys for medical purposes
- in our study the use of honey was successful in achieving an excellent result on the treatment and quality of patient's life