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CHAPTER 1
HIDRADENITIS SUPPURATIVA: AN OVERVIEW

INTRODUCTION

Hidradenitis suppurativa (also known as Acne Inversa) is a chronic disorder that affects the skin and occurs at areas where there is skin-to-skin contact and where apocrine sweat glands are present. This disease is characterized by a defect in the follicular epithelium, resulting in the obstruction of the follicular epithelium, which appears as a black-tip mass. Some other characteristics include inflammation, mucus and pus-containing discharge, abscess formation, formation of tunnels or sinus tracts connecting abscesses and healing by scarring.

The origin of this disease dates back to 19th century when Velpeau first described this condition in 1839. He encountered it during his clinical experiments on a patient who presented superficial abscesses in the mammary, perianal and axillary regions. He linked this condition to the sweat glands, basing his diagnosis on the clinical presentation of the disease, and he conducted no histopathological studies to confirm it. Before being referred to as hidradenitis suppurativa, this disease was known as Verneuil's disease.

Another physician, Schiefferdecker, also limited this disease to the apocrine glands of the body in 1932. Still another skin specialist Brunsting gave histopathological features of hidradenitis suppurativa in 1939. His histological summary was based on the analysis of specimens taken from the lumen and connective tissues surrounding the apocrine glands. Brunsting described that the main feature of the disease was excessive proliferation of keratin in the follicular epithelium of the gland, with secondary infection, usually bacterial in nature. He too, like his predecessors, associated the disease with acne.
Another term *follicular occlusion triad* was introduced by Pillsbury and his colleagues in 1956. It included hidradenitis suppurativa, dissecting cellulitis and acne conglobate as well. Acne tetrad was still another term introduced by Plewig and Kligman in 1975. It included the components of follicular occlusion triad with the addition of pilonidal sinus.

Yet another term introduced by Plewig and Kligman in 1989 was *acne inversa*. It was quite appropriate title regarding already introduced terms that included follicular occlusion triad or acne tetrad.

As hidradenitis suppurativa is a defect in the follicular epithelium of the gland, it is still commonly referred to as acne inversa, which actually defines the nature of the disease and gives an idea that this disease has localized follicular occlusions.

In United States, the incidence of the disease is one to two percent, while its global level occurrence is estimated to be between one and four percent of the general population.

**MORTALITY AND ILLNESS TRENDS**

Hidradenitis suppurativa is a chronic progressive disorder that means that it carries on increasing instead of mitigating, if not treated on time. It is a frequent cause of hypertrophic scarred skin lesions called keloids, loss of joint movements from contractures and possibly rendering the patient immobile.

As compared to healthy individuals, the health levels and illness patterns in a patient with hidradenitis suppurativa decline -- a condition where it leads to severe complications, if it is left untreated. The mean Dermatology Life Quality Index [DLQI] is a scale that describes the degree of severity of the skin disease and how it affects a patient's lifestyle. Hidradenitis suppurativa has a DLQI score higher (more severe) than most other skin diseases.

**RACE, GENDER, AND AGE DISTRIBUTION**

Hidradenitis suppurativa has an increased incidence in dark skinned people, as they have an increased number of apocrine glands when compared to the people with paler tones.
Usually it occurs in females more than in males. The female to male ratio for hidradenitis suppurativa stands at 3:1. The lesions are, however, equally distributed in both sexes, but genitofemoral lesions occur more commonly in females and perianal lesions occur more frequently in males. However, lesions, involving the axilla, are not gender-specific.

The disease generally occurs between the ages of 20 to 30, with the average age of patient being around 23 years.

HIDRADENITIS SUPPURATIVA CLINICAL PRESENTATION

1. The disease has an insidious onset.
2. Early symptoms include -- itchiness, redness and rash on the affected skin and increased sweating localized to the involved areas.
3. The initial lesions are not painful, but with the progression of time, they tend to become painful and chronic itchiness occurs.
4. Joint diseases, which occur because of hidradenitis suppurativa, have variable clinical presentations.

Hidradenitis suppurativa's diagnosis is primarily based on clinical presentation. The option of biopsy is available but is rarely carried out. As clinical presentation is the basis of diagnosis, this approach is based on three basic keys: lesions, distribution and recurrence are designed to diagnose it. The primary lesions of hidradenitis suppurativa are based on these key elements and are described as:

1. Painful and or tender reddened inflamed elevation of the skin, which is less than 1cm in diameter.
2. Painful and or tender reddened inflamed rounded wart like elevation of the skin [nodule] which is larger than 1cm in diameter.
3. Painful and or tender pus-containing cavity and papules or nodules, which are inflamed with excretion of a discharge.
4. Contractures of the dermis and elevation of parts of skin giving it a ropelike appearance.
5. Comedones [black heads] that are double ended.

The axilla and the groin are two major areas it attacks. Other areas include the breasts, scrotum, buttocks and perianal area. Another criteria for diagnosing hidradenitis suppurativa clinically is to see if the patient fulfills anyone of the following criteria:

A. One or more primary lesions with active disease on the specific site.

B. A history of three or more painful or discharging lumps at the specific sites.

C. Absence of any primary lesion with inactive disease and a history of five or more painful or discharging lumps in the specific sites since age 10.

Diagnosis in clinical setting can also be based on a series of questions asked to the patient. These questions are used to find out the relevant details regarding the disease and its course. The questions are as follows:

1. Is there a single or multiple inflamed lesions present?
2. What is the duration of time, since the first lesion appeared?
3. Are there any new or recurrent lesions?
4. Are the lesions located unilaterally or bilaterally?
5. What is the primary location of the lesions?

The severity of the disease varies from person to person. In some patients, one region is affected, while in others it could affect several bodily regions.
Figure 1. Mild hidradenitis suppurativa.

Figure 2. More extensive hidradenitis suppurativa.
Symptoms of disease when it is fully developed include:

- Recurrent local abscesses
- Abscesses with purulent drainage
- Painful nodules/abscesses
- Disfiguring scarring
- Draining sinuses

We can identity that a person is suffering from this disease through some characteristic symptoms. Most of these symptoms appear at early stages.

- Pruritis
- Erythema
- Local hyperhidrosis
- Painful, red papules or nodules

Figure 3. Underarm red nodules and cysts as a result of hidradenitis suppurativa.
OTHER FEATURES

The disease starts with the appearance of a small nodule. Initially this nodule is painless and may spontaneously rupture with pus. Healing of the lesion formed thereafter takes place through the collection of fibers. Its reoccurrence usually takes place in an adjacent area shortly after that. The course of disease from the appearance of a painless nodule to its rupture and formation of tender lesions, which is painful and heals by fibrosis, has a high diagnostic value.

Abscess formation may occur if the nodules coalesce and become secondarily infected. Subcutaneous abscess may form when the infected apocrine glands coalesce. Abscesses may heal temporarily, or progress to form a fistula with pain.

As the disease progresses, sinus tracts connecting abscesses may appear. The nodules drain via the sinus tracts. Nodular hidradenitis suppurativa is a type of hidradenitis suppurativa in which there is appearance of sinus tracts and repeated cycles of discharge, which is either through pus or blood. Identification of a sinus tract is very simple. It is either angular or linear in shape and stays for a long time, having various responses to systemically administered retinoid, isotretinoin. The sinus tracts persist for a long time if left untreated and coalesce with abscesses to form a subcutaneous network resembling a honeycomb. Eventually the process of healing starts which results in fibrosis, scaring, hypertrophy and hardening of the affected part.

Comedones are a usual finding in hidradenitis suppurativa. They are numerous in number and maybe opened or bridged. They lead to the development of abscesses and sinus tracts. With further progression of the disease, most of the apocrine glands are destroyed by the disease process, so they decrease in number. It mostly affects the axillary region, where lesions which develop are initially firm and interconnected to each other. As the disease gets severe and becomes chronic, persistent redness of skin with contractures and scars develop. Because of contractures, immobility occurs and patient is unable to perform simple tasks such as the raising of his upper arm above the horizontal plane.
Red brown lesions are seen with inguinal and anogenital lesions. These lesions usually have fistulas through which the discharge of blood, pus or a smelly liquid takes place. Perianal hidradenitis suppurativa is a variant of hidradenitis suppurativa, which occurs in the skin surrounding the anal area. It is a painful condition accompanied by bleeding, inflammation, formation of fistulas and a pus containing discharge. This disease results in an increased destruction of the architecture of skin of the affected area.

The clinical signs and symptoms of perianal hidradenitis suppurativa are similar to the cutaneous manifestation of Crohn's disease. Crohn's disease is an inflammatory bowel disease of unknown etiology. A researcher, Church, noticed that hidradenitis suppurativa coexisted with Crohn's disease in 39 percent of the patients.

The two conditions have the potential to mask each other. If a patient, suffering from Crohn's disease, develops hidradenitis suppurativa during the course, it makes the condition even worse and painful. The patients usually suffer from sepsis, which is either treated by certain fecal diversion methods or proctocolectomy.

Both Crohn's disease and hidradenitis suppurativa are inflammatory and chronic in nature. The main indicative factor that these two disease conditions are inflammatory in nature is the presence of non-caseating epitheloid type granulomas. These granulomas form as a result of an abnormality in the immune system of the patient.
CHAPTER 2
DIAGNOSIS AND MEDICAL TREATMENTS

LABORATORY TESTS

In order to diagnose and evaluate hidradenitis suppurativa, the following tests are usually performed:

- Complete blood count, including the platelet count
- Differential white blood cell count
- ESR -- erythrocyte sedimentation rate
- Urinalysis
- Serum iron levels
- Serum protein electrophoresis
- Assay of C -- reactive protein

When the disease takes an acute course, a patient shows an elevated reading of the ESR, low levels of iron and abnormalities in the electrophoresis.

In order to get a better view of the disease, ultrasonography is performed for the hair follicles and thickness of dermis, which shows abnormalities. Thickened skin and abnormality in shape of the follicles is usually seen with hidradenitis suppurativa.

DIAGNOSTIC TESTS FOR HIDRADENITIS SUPPURATIVA

An in depth bacterial analysis of the lesion of hidradenitis suppurativa is also performed. It includes both sampling of the lesion and cultivation of bacteria. Sampling of the lesion is performed by carbon dioxide laser, which gives different samples of the affected tissue from different depths. The bacteriologic analysis of these samples shows many species of bacteria. Most commonly found bacteria’s include -- Staphylococci, Streptococci and Bacteroides. Other species of bacteria may also be present in the
tissues. However, bacteriological analysis often yields different results, since the microbiological flora can change and vary from person to person.

Immunohistochemistry is another important diagnostic test, which is of great value. It is performed to know the underlying cause of the disease. The procedure considers various cytokeratins and cadherins, based on which three phenotypes of stratified squamous epithelium have been found. These cover the sinus tracts that are formed during the disease process of hidradenitis suppurativa. These three phenotypes are:

*Type-I: Comifying*

*Type-II: Mild to moderately inflamed, non-comifying*

*Type-III: Severely inflamed, non-comifying*

Type II and III stratified squamous epithelium are the non-comifying types. In non-comifying epithelium the terminal differentiation markers are absent, which include cytokeratin 10 and desmoglein 1. In the basal cell layer, there is strong expression of desmoglein 2. In comparison to normal and type I epithelium, the desmogleins 2 and 3 are present in all layers, whereas desmoglein 3 is only present in parabasal and basal layers. Type III epithelium is characterized by severe inflammation, with the presence of cytokeratins 7 and 19, and the absence of desmoglein 1. These features make it different from the other two phenotypes.

These three types of epithelium are different from the epidermis between the follicles. This is because the cytokeratins 2e, 6, 13, 15 and 16 are present, which reflect that the epithelium of sinus tract have undergone alteration. These proteins if present show that the pathological process has resulted in a varying degree of inflammation and growth.

Cytokeratin 19 is usually found in the outer root sheath. It is found in the basal cell layer of type II and III epithelium, which are the non-comifying types.

One of the studies conducted on type I stratified squamous epithelium surrounding the opening of sinus tract showed similarities with upper pilosebaceous duct. The upper pilosebaceous duct is one from which the inflammatory process starts.
Cytokeratins 5 and 14 are present in the normal epithelium of the pilosebaceous duct and also the type I sinus epithelium. Cytokeratin 10 and desmocollin 1 protein antibodies are present in the suprabasal cell layer along with desmogleins one and three, while in the suprabasal cell layers desmoglein 2e is absent.

According to a study conducted by Kurokawa et al, which was based on the expression of cytokeratin expression in hidradenitis suppurativa, the sinus tract epithelium is divided into three lesions:

- **Type A** – *keratinized epithelium which resembles infundibular epithelium*
- **Type B** – *keratinized epithelium which is not similar to infundibular epithelium*
- **Type C** – *non keratinized epithelium which is not similar to infundibular epithelium*

Cytokeratin 17 is important, as it maintains the cytoskeletal structure of the glands. The absence of this cytokeratin makes the follicles fragile and they easily rupture. Presence of cytokeratin 19 is associated with a premalignant change, which is occasionally found in the basal layer of epidermis in hidradenitis suppurativa. The lesions produced by hidradenitis suppurativa differ from the normal epithelium as they have an epidermis, which shows abnormal proliferation, and the cells are usually undifferentiated.

**HISTOPATHOLOGY OF HIDRADENITIS SUPPURATIVA**

Histopathological features of hidradenitis suppurativa show hyperkeratosis of the epithelium. Follicular occlusion is another feature which is very prominent in the specimens of tissue affected by hidradenitis suppurativa. The initial event of the inflammatory process is the rupture of the follicular epithelium.

Chronic hidradenitis suppurativa involves the dermis, which is composed of a chronic inflammatory infiltrate, which mainly consists of lymphocytes and macrophages. The chronic disease is also associated with the formation of various granulomas, composed of epitheloid cells surrounding the sinus tracts and hair follicles. Presence of
granulomas might be an indication of presence of a coexisting disease with hidradenitis suppurativa as Crohns disease or Sarcoidosis.

STAGES OF HIDRADENITIS SUPPURATIVA

Staging of hidradenitis suppurativa has an important clinical diagnostic value. Soluble interleukin-2 receptor level is used as an important marker for the staging of hidradenitis suppurativa as shown by studies conducted recently.

- **The first stage** involves the presence of single or many separated abscess formation, with no sinus tract formation or scarring
- **The second stage** involves single or multiple separated abscess, which reoccur and involves the formation of sinus tract
- **The third stage** involves multiple abscess formation which are interlinked by sinus tracts and spread to involve a diffused area

These stages have been used to select possible treatment options as well as to see the outcomes of treatment being conducted on the patient.

TREATMENT OPTIONS FOR HIDRADENITIS SUPPURATIVA

Treatment of hidradenitis suppurativa should ideally be directed towards curing the disease completely, and preventing its reoccurrence. The conventional treatment options are either medical or surgical. Medical treatment is provided at the initial stages of the disease, while surgical treatment is opted for when fistulas, scars, abscesses and sinus tract appear.

Lifestyle advice for hidradenitis suppurativa includes:

- Maintenance of general and local hygiene
- Weight loss for overweight patients
- Use of antiseptics
- Use of warm compresses with sodium chloride solution
• Wearing clothes that are loose fitting

Anti-inflammatory therapy which includes tetracycline, finasteride or triamcinolone may be used to control inflammation.

**MEDICAL AND SURGICAL OPTIONS**

In case of chronic and recurrent variants of hidradenitis suppurativa, surgery may be opted for. The most common surgical procedure involves excision of the lesion which is wide and beyond the borders of the lesion. By wide excision of the lesion, the chances of reoccurrence decrease, but there exists the possibility that the disease might emerge again in distant future. Some studies show that after aggressive surgical excision, the lesions of hidradenitis suppurativa reoccurred in about 33 percent patients. The reoccurrence after surgery is variable, but usually most of the studies reflect that the rate of reoccurrence decreases to some extent if not completely.

In some cases, wide surgical excision is not performed. A more limited surgery is performed, involving incision of the roof of an abscess or a sinus, or a curettage at the base of the lesion. The lesion is then allowed to heal. This procedure can be successful in some cases.

Electrosurgery is also an option for the lesions of hidradenitis suppurativa. It may be a better option compared to the conventional wide excision surgery.

The conventional surgical procedure which involves radical excision of the lesion is the best option, but it does not eliminate the chances of reoccurrence, so the patients undergoing surgery should be informed beforehand that the lesions might occur in areas previously not affected.

Minor surgical procedures include:

• Drainage of the lesion
- Deep curettage
- Exteriorization
- Sinus tract electrocoagulation
- Simple excision of lesion with direct closure of the site
- Placement of flaps with healing by secondary intention -- the types of flaps used include: pedicle flaps, free flaps, cutaneous flaps, musculocutaneous flaps
- Skin grafts

In case of acute disease, the incision and drainage of lesions is a good option and provides temporary relief. The lesions however reoccur after sometime. Incision of the roof of the lesion and curettage are considered to be initial treatments before considering major definitive treatments. Another procedure can be performed in bridging lesions. It involves paralleling of the incisions with the skin fold, followed by injection of a dye for better visualization and removal of the tissue.

In case of chronic hidradenitis suppurativa, surgical excision of the lesion to 2cm beyond the borders of the lesion may be performed to prevent reoccurrence. The excision should be broad and deep to effectively get rid of the diseased tissue. For the clearance of the zone of diseased apocrine gland, it is important to remove up to 5cm of the subcutaneous fat extending up to the deep fascia. Mostly methyl violet is injected in the diseased area, which is to be excised so that all the affected area is excised completely. By injecting the dye, visualization is improved and a successful elimination of the diseased portion is achieved. Complete clearance of these areas is required to prevent reoccurrence of the lesions.

Carbon dioxide laser is used to surgically excise the diseased portion. This surgical treatment option yields better results and has far less complications as compared to the conventional surgical procedures. The procedure involves removal of layers of the diseased tissue by vaporization. By performing this procedure, all the pathological tissue is removed, including the sinus tracts and septic pockets formed because of the disease process. This procedure is most commonly performed for the perianal lesions.
Antibiotics are frequently used for this condition, especially because bacterial infections are used. The antibiotics used for this purpose include tetracycline, clindamycin, doxycycline, dapsone, erythromycin, metronidazole and minocycline. However, the problem with all these surgical and medical treatments is that they have side effects.

The removal of lesions of hidradenitis suppurativa involves aggressive eradication of the affected tissue, which prevents the normal healing procedures. In order to attain successful wound healing, other surgical procedures must be considered. The methods by which the surgical defect can be reconstructed to aid successful wound healing are dependent upon factors like size and location of the defect. Different types of flaps and skin grafts are used to cover the defect. Various clinical trials have been performed to assess which types of flaps and skin grafts are successful at different regions of the body, where the lesions of hidradenitis suppurativa exist. So the achievement of the best option for the replacement of defect with either a flap or a skin graft depends upon the area in which the defect is located and the depth of excision which has been made to remove the defected tissue.

The treatment of hidradenitis suppurativa is a very challenging procedure. It involves the use of disinfectants and antibiotics, both local and systemic, with the incision and draining of the lesions. In the early stages of the disease, medical treatment is the best choice, but as the disease progresses and becomes chronic with the appearance of nodules, sinus tracts, fistulas and scars, surgery is the best option.

Cryotherapy is used besides other medical and surgical treatment options. It is an adjunctive therapy, but is helpful in speeding up the reversal of inflammation. Before undergoing the procedure of cryotherapy patients are informed about the side effects of the procedure, which includes pain, risk of infection and delayed healing.

Antibiotics are frequently used for this condition, especially because bacterial infections are common in hidradenitis suppurativa patients. A combination therapy including corticosteroids and antibiotics can be of great value. Both systemic and local antibiotics are used. The antibiotics used for this purpose include tetracycline, clindamycin, doxycycline, dapsone, erythromycin, metronidazole and minocycline. However, the problem with all these surgical and medical treatments is that they have side effects.
CHAPTER-3
DIETARY AND LIFESTYLE CHANGES

As hidradenitis suppurativa is an inflammatory skin disorder, it is characterized by inflammation -- a defense response of the body in order to overcome and eliminate the harms that the disease is to cause the body cells. Symptoms, as described in the first chapter, include swelling, redness, pain, increased heat and loss of function of the area. Although inflammation is a protective response and generates stimuli to initiate the repair process in the body, this process itself causes considerable harm to the body, especially in this condition where it is present excessively. Fortunately, nature has benefited human beings with certain foods that when consumed, have an anti-inflammatory effect on the body and help control the disease. On the other hand, the consumption of other foods can further exacerbate the inflammatory response. By keeping your diet rich in anti-inflammatory foods and by adopting a number of natural remedies described in the next chapters, you can cure yourself of the disease.

DIETARY MEASURES

There are several foods that prove to be elixirs for some diseases, while some others trigger greater reaction and even cause lots of damages, besides increasing the effects of the disease. In case of hidradenitis suppurativa, the foods that prove beneficial are suggested below. In general, we are aiming to cut down foods high in saturated fats and/or simple carbohydrates, and increase the intake of omega 3s, fiber, starchy carbohydrates, fruits and vegetables.
FOODS TO CONSUME

1. Oils and Fats

You should increase your intake of omega 3 fatty acids, especially the long-chain omega 3 fatty acids EPA and DHA. The best sources of these are oily fish (such as salmon and mackerel) and fish oil supplements.

Vegetarian sources of omega 3 fatty acids include seeds, nuts, flaxseed oil, canola oil, algae and algae supplements.
Omega 3 fatty acids stimulate the body to produce molecules (called eicosanoids) that combat inflammation. These work in a similar way to non-steroidal anti-inflammatory drugs (NSAIDs) but without the side effects.

2. Carbohydrates

You need to choose whole grain, low-GI carbohydrates instead of simple carbohydrates as the latter result in an insulin spike which exacerbates inflammation. Therefore choose whole grain/whole meal bread and pasta over white, whole grain cereals, and whole grain pasta.

3. Vegetables and Fruits

Vegetables and fruits are a natural source of vitamins, antioxidants, minerals, fibers and phytochemicals. It is essential to consume fruit and vegetables each day, preferably five servings per day. Brightly colored, green and leafy vegetables and fruits included in your daily diet will keep you healthy and fit. In fact, the consumption of vegetables and fruits, improves immune functioning, eliminates harmful substances from the body, prevents harmful diseases such as cancer, improves digestion and thereby maintains harmony of the bodily environment and the ongoing processes. Antioxidants in fruits and vegetables help to combat inflammation, and this will help speed up the healing process of hidradenitis suppurativa.

4. Sources of Proteins

Proteins are the building blocks of life, which are necessary for the body to carry out all vital processes. Therefore, consumption of protein is necessary for health and crucial for wound healing of lesions caused by hidradenitis suppurativa. Good protein sources include:

- White meat such as poultry, fish and seafood
• Soy and soy foods as tofu
• Legumes
• Nuts such as almonds, walnuts, cashew nut, brazil nuts and pecans
• Seeds such as sunflower seeds

5. Healthy Beverages

• Water: The human body needs water to function. Water can be consumed in any form whether it is bottled, tap water or sparkling water. Drink at least eight glasses of water per day (or 2 liters if you are a women and 3 liters if you are a man). Keeping well hydrated will help to keep your skin in optimal health.
• Parsley Tea: Parsley tea is high in antioxidants, vitamin C and anti-inflammatory molecules.
• Fresh fruit juices without any additives and preservatives.
• Milk, but choose low fat milk (as full-fat milk contains saturated fat that can cause inflammation).
• Vegetable juices which are low in sodium.

Foods to Avoid

Frequent consumption of foods that have a high fat (especially saturated fat and trans fats) and sugar content, processed foods and all types of junk food harm the body. These foods will cause inflammation and will exacerbate hidradenitis suppurativa.

• Try to minimize and avoid food that are rich in calories, trans-fats and saturated fats, such as fatty meats, processed meats, full-fat dairy products, burgers, pizzas, fries, etc.
• Avoid the use of refined white flours and instead choose the option of whole grains.
• Decrease the consumption of sugars by avoiding carbonated beverages, ice creams, chocolates, bakery items, candies and sweetened cereals.
SUGGESTIONS TO MODIFY YOUR DIETARY PLAN

- Go for fresh foods rather than choosing highly processed variants.
- To start your day, eat oatmeal with berries and walnut for breakfast.
- Stop consuming candies and cookies in your snack time. Switch to healthy snacks such as nuts, fresh fruits and vegetables, seeds and fresh juices.
- Decrease consumption of red meat as it contains saturated fats. A better option is to consume fish as a protein source.
- Add fresh fruit and vegetable salads to your meals. These should half fill your lunch or dinner plate.
- Avoid foods that have been deep fried.

FOOD WITH SPECIAL ANTI-INFLAMMATORY AND INFLAMMATORY EFFECTS

It is necessary for patients suffering from hidradenitis suppurativa to include foodstuff which exert an anti-inflammatory effect on the body, since this disease has an inflammatory origin. Including anti-inflammatory foods is an easy way to modify your diet which will benefit you in curing the disease. On the other hand, foods that exert an inflammatory effect on the body should be avoided by the patients of hidradenitis suppurativa, as they can lead to further worsening of the condition. Here is a list of the anti-inflammatory and inflammatory foods to help you with setting a goal for yourself.

ANTI-INFLAMMATORY FOODS

- **Kelp**

Kelp is a natural brown algae extract with various beneficial properties for skin problems. It is a good fiber source and is beneficial in treating and preventing cancers of lung and liver. Kelp has an anti-inflammatory effect on the body. Other than that, it is a powerful anti-oxidant and tumor suppressor. Good sources of kelp are wakame, kombu and arame. You can also find a number of supplements that provide kelp extract.
• **Vegetables**

Vegetables are a rich source of vitamins, fiber, anti-oxidants and minerals. Kale, broccoli, cauliflower and brussel sprouts are enriched with healthy anti-oxidants, which are essential to neutralize the free radicals produced during the usual body processes. These vegetables are a natural source of detoxification.

• **Extra Virgin Olive Oil**

Olive oil has long been used because of its beneficial effects on the body. Extra virgin olive oil is rich in healthy fats essential for the body to perform all its vital functions. It has an anti-inflammatory effect and is also helpful in preventing cardiovascular diseases.

• **Wild Alaskan Salmon**

Fish are a rich source of Omega-3, the essential fatty acid. Oily fish, such as Salmon, have a very rich content of Omega-3 as well as essential oils, which benefit the body and have an anti-inflammatory effect. You should try to include fish in your diet regimen, at least twice weekly. If fish is not tolerated either due to taste or texture, try alternatives as fish oil or fish supplements in your diet.
• **Sweet Potato**

It is a rich source of fibers, carbohydrates, vitamins and minerals. Vitamins such as Beta-carotene a form of vitamin A, vitamin B6 and C are found naturally in the sweet potatoes. It serves as a powerful anti-inflammatory agent, and helps to reduce inflammation.

• **Garlic**

Garlic has a lot of health benefits if consumed and included in your diet. It exerts a strong anti-inflammatory effect on the body, and it strengthens the immune system and regulates blood glucose levels.

• **Turmeric**

Turmeric is a very famous spice in Asian countries and delivers anti-inflammatory effects. It is also said to prevent various infections as it boosts up the immune system. It is an efficient painkiller, and is beneficial for patients to use in the treatment of hidradenitis suppurativa.

• **Green Tea**

Green tea is a natural detoxifying agent. It is loaded with anti-oxidants, which maintain a strict control over ongoing processes in the body thereby benefiting the body. It helps to remove all the harmful substances as free radicals by neutralizing them. It has a strong anti-inflammatory effect and anticancer benefits.

• **Ginger**
Ginger in any form is healthy for the body. Ginger contains enzymes and compounds, which are protective against various types of cancers, helps to control blood sugar and has an anti-inflammatory effect.

- **Blueberries**

  Blueberries are a source of antioxidants. They have an anti-inflammatory effect, prevent aging and are beneficial against diseases involving the brain such as dementia, and cancer. When choosing blueberries make sure they are organic to make sure that there are no pesticides used; otherwise because of their size, the pesticides would be hard to wash out.

- **Parsley Tea**

  Parsley tea is high in antioxidants, vitamin C and anti-inflammatory molecules and can speed up wound healing in HS. You can prepare parsley tea yourself:

  Ingredients: Four cups of water; four healing teaspoons of fresh parsley, minced (including stems).

  Instructions:
  1. Boil 4 cups of water.
  2. Remove the water from the heat.
3. Mince (cut up finely) 4 heaping teaspoons of fresh parsley. Put it into the boiled water and stir.
4. Let it steep 20 minutes.
5. Strain it, and drink it hot or cold. It may be reheated without harming it, but do not boil it.
6. Drink all 4 cups throughout the course of one day, for 7 days, to heal lesions of hidradenitis suppurativa.

### LIST OF INFLAMMATORY FOODS

- **Full-fat Dairy Products**

  Full fat milk and full-fat dairy products are not a good choice when a person is suffering from hidradenitis suppurativa, since they trigger inflammation. Choose low or zero fat dairy products.

- **Sugars**

  Nowadays sugars appear to be an ingredient of all the processed and junk foods. Sugar and foods high in sugars cause insulin to be secreted rapidly, and this results in inflammation which exacerbates hidradenitis suppurativa. Avoid foodstuffs that contain sugar as an ingredient; instead opt for healthy and fresh fruits with natural sugars, which are far less harmful as compared to processed sugars.

- **Harmful Fats**

  Saturated fats and Trans-fats are the harmful fats that increase the risk of many severe diseases, cause inflammation and aggravate HS. These fats promote an increase production of low-density lipids, cholesterol, resistance to insulin,
obesity and also play a role in inflammation. These fats are found in deep fried food, margarine, peanut butter, and baked items like cakes, pastries, etc.

- **Food Additives And Preservatives**

  MSG [mono sodium glutamate] and aspartame are commonly used food additives that help to enhance the flavor of food. Although they give a good food flavor, these ingredients are very harmful and can cause widespread inflammation within the body.

- **Meat From Farm Animals**

  Farm animals are fed on fatty feed and are also injected with antibiotics and various hormones, due to which they gain excessive fat. Hence, meat from such animals is harmful and can elicit inflammatory reaction in the body. It is advisable to choose organic meat products.

- **Alcohol And Alcohol Containing Beverages**

  Alcohol is bad for health if consumed excessively. It affects many organs of the body, leading to their degeneration. Alcohol consumption has serious side effects on liver and eventually results in liver cirrhosis or liver cancer.

- **Red Meat**

  Red meats are harmful to the body if taken in excessive amounts. The recommended use of red meat is once a week. A diet rich in red meat should be replaced by a diet, which is rich in fresh fruits, vegetables, and white meat, especially fish, twice a week.

- **Refined Grains**
Use of refined grains such as white flour, pastries, pasta and white rice should be restricted. The refined grains are devoid of fiber. They have a very high glycemic index. They can cause inflammation in the body, so try to replace them with minimally processed or refined grains such as brown rice.

**LIFESTYLE CHANGES**

Lifestyle changes can greatly improve the condition and mitigate the symptoms, and are required if you want to get rid of hidradenitis suppurativa. Changes in lifestyle can be challenging because the body gets used to a routine, but once you have surpassed the initial point, you can easily adapt to the new healthy lifestyle and remain fit for the rest of your life.

Given below are some useful tips to help you understand the importance of lifestyle modification while suffering from hidradenitis suppurativa.

- Application of cold compresses or icepacks is beneficial and reduces swelling and edema. Apply these for as many times daily as you wish.
- The area affected by the disease should be kept clean. Wash the surface with a good anti-bacterial soap. Try to avoid sweating in the area where the disease process is active. After thoroughly cleaning and drying the affected area, apply an antibiotic in ointment or cream form. Use a natural deodorant such as one based on tea tree oil.
- Opt for wearing clothes that are loose fitting. It helps prevent against irritation of the skin caused by wearing tight clothes.
- The areas affected by the disease should not be shaved, as this might result in further irritation of the area.
- Avoid smoking, use of drugs and alcohol consumption, as this is not only beneficial for the health but also results in improvement of the condition. Smoking is a well known causative and aggravating factor for hidradenitis suppurativa. In fact, more than 80% of hidradenitis suppurativa patients are smokers.
- If you are overweight, you should lose weight. When a person becomes overweight, they tend to develop areas where the skin at one area touches the skin at other area. These areas are more prone to bacterial infection, sweating and friction.
- Stress is both a causative and aggravating factor - find ways to deal with it. Talk to a counselor for help, and try to find the time to do pleasurable, relaxing activities. It is also very important to get enough quality sleep; try to aim for 8 hours each night.

Hidradenitis suppurativa is a very painful disorder. It can make a person go through a lot of agony from physical, emotional and social perspectives. The sight of seeing your skin undergoing a drastic change of developing lesions, which usually drain and are smelly, is very distressing. It can make you frustrated and depressed. The disease has an ongoing pattern with periods of active disease and dormant disease, and the course of the disease is long and hectic.

In order to help yourself to overcome the agony you are facing because of hidradenitis suppurativa, some easy tips are given below:

- Apart from seeking information from your doctor, it is necessary for you to educate yourself about hidradenitis suppurativa. If you have sufficient background information you will be strong enough to deal with the complications which are to follow the disease.
- It is important that you strictly follow the advice given by your doctor regarding medical treatments, dietary and lifestyle modifications. This will speed up the healing process.
- It is recommended that you share your feelings with somebody you trust. Tell them about the disease and how it is affecting you. You will be comfortable and at times of depression you will have support to overcome the period of agony. You should also check out online and local support groups, such as HS-USA and HS Friends UK.
CHAPTER-4
HOME REMEDIES

USEFUL THERAPIES

1. HYDROTHERAPY

Hydrotherapy is a very effective therapy used to treat hidradenitis suppurativa. It was previously known as hydropathy and involves water usage for treating the illness and bringing about pain relief. In the 19th century, hydrotherapy was commonly referred to as "water cure" and this term was used by many practitioners, and a person practicing this tool is known as a hydrotherapist.

In this section, we are going to discuss use of hydrotherapy which is in tune with our current discussion pertaining to hidradenitis suppurativa. As discussed above, this term has a wide range of definitions and applications. Some of these definitions have been coined to cater to the distinct nature of different practices, while others have been coined for marketing purposes. The later ones overlap significantly, due to which sometimes it becomes difficult to differentiate between the two forms of hydrotherapy.

The International SPA Association has identified that hydrotherapy is a significant element of the globally popular European spas. A spa is a form of hydrotherapy that encompasses a long list of methods, such as jet based hydrotherapy, mineral baths [examples include Scotch hose, Swiss shower, thalassotherapy, balneotherapy, iodine-Grine therapy, and Kneipp treatments], and underwater massages.

Other examples of therapies that fall under this category include hot roman baths, Jacuzzi, cold plunges, whirlpool baths etc. All these treatments use the natural physical properties of water for treating patients. These natural properties stimulate the blood circulation and by doing so bring about curative effects specifically to the dermis and epidermis tissues and cells which in turn help stopping hidradenitis suppurativa.

There are different appliance arrangements used for hydrotherapy. These include:
2. BALNEOTHERAPY

This refers to a form of therapy that employs the use of baths to cure a specific health condition generally related to skin. It is generally considered different from hydrotherapy but major differences in the treatment principles are procedures of these two therapies.

Balneotherapy generally involves massages through moving water, using both hot and cold water, to give rise to a relaxing and stimulating effect. Certain types of water are found more effective during the course of this treatment. There are mineral waters available at spas that contain relevant minerals, such as sulfur, silica, radium and

- Hot air and steam baths
- Sitting, head, foot, and spinal baths
- Wet and dry bandages
- Packings
- Sweating and cooling
- Fomentations and poultices for rubbing
selenium, which are absorbed by our skin. Medicinal clays are also used for this purpose, and the treatment that involves the use of medicinal clays is referred to as fangotherapy.

The concept behind balneotherapy applies to a large variety of treatments that encompass the entire spa experience. These include natural vapor baths, hot baths, mud and sand therapies, and treatments that involve drinking water. However, balneotherapy refers to the usage of these treatments for achieving therapeutic ends instead of recreational ones.

There are some common minerals that make up the water used for this purpose. These include sodium, magnesium, calcium and iron, arsenic, lithium, potassium, manganese, bromine, and iodine. These minerals are generally present in water that is used in spas. Additionally, resorts add these minerals, along with essential oils, to natural hot springs as well. Even though most practices in balneotherapy involve the use of mineral water, there are many practices in this therapy that use hot or cold common tap water as well. Mud baths are an important element of balneotherapy as well. The entire purpose of these both therapies is to cleanse our skin from all impurities, ultimately leading to curing skin problems including hidradenitis suppurativa and both have been proved highly effective for this specific type of skin problem.

3. ICING INFLAMED AREAS

This treatment does not actually cure the underlying condition but provides pain relief.

Icing is an effective strategy that is used to numb the pain and reduce the swelling. It is also a good therapy for conditions such as patellofemoral pain syndrome, like carpal tunnel syndrome, iliotibial band syndrome, tennis elbow, plantar fasciitis, achilles tendinopaties, and shin splints. However there are some basic precautions that you should observe during icing. It is best to not use ice if you are suffering from one of more of the following:

- Your skin has a poor response to cold and heat
- Poor circulation
• Diabetes

• Infection of any sort

• Avoid using an ice pack on the left shoulder if you are suffering from a heart condition

• Avoid using ice packs at the neck sides and front
CHAPTER-5
HERBS, MINERALS, AND VITAMINS

1. HERBS

TEA TREE OIL

Tea tree oil, which has various beneficial properties and is regarded as a great remedy for the cure of skin diseases especially those involving acne, is extracted from of Melaleuca Alternifolia through distillation. In ancient times, the natives of Australia used the leaves of Melaleuca Alternifolia as an alternative for tea.

It is used effectively to cure hidradenitis suppurativa due to its antimicrobial, antiseptic and healing properties. The major constituent of tea tree oil is terpenoids, which delivers these remedial results. Traditionally in the past, a mixture of crushed leaves was applied past on burns, wounds and infected areas to aid to the healing process. Nowadays it is available as a convenient oil.

Since tea tree oil has antiseptic and antimicrobial activity, it is a potent source of treatment for all kinds of skin diseases. Its usage is also recommended for the affected part after bathing, until the lesion heals. You should apply the oil onto some thick tissue or facecloth and apply this to the lesions.

The dermatology department of Royal Prince Alfred Hospital, Australia, carried out a detailed research to check the beneficial effects of 5 percent tea tree oil and 5 percent benzoyl peroxide against acne and related skin problems. This study also compared the effects of tea tree oil against benzoyl peroxide. This study demonstrated that benzoyl peroxide was an even more potent source of treatment than tea tree oil, but had a lot of side effects. Whereas, tea tree oil was able to heal the acne and had almost no side effects on patients.
LEMON JUICE

You may cringe at the thought of squeezing fresh orange juice into your lesions and open wounds. Although it will sting, lemon juice has been shown to exert miraculous properties when it comes to healing hidradenitis suppurativa wounds, lesions, and bed sores. Squeeze fresh lemon juice on the affected area before bed, and you will start seeing improvements in just a few days.

CASTOR OIL

Castor oil is obtained from castor plant, called Ricinus communis. It is a type of vegetable oil. It is a colorless, tasteless and odorless liquid with a thick consistency. Castor oil is a triglyceride. The main component of castor oil is ricinoleic acid, while some other components include Oleic acid and linoleic acid. It is extracted from the castor seeds, and has very high boiling point of 595°F.

The property of castor oil, which makes its use beneficial for hidradenitis suppurativa and other skin problems, is that it is a purgative as it effectively draws out impurities from the lesion or boils and has soothing effects on the skin as well. It can be used with a cotton ball or gauze on the lesion or boil. Make sure that before the application of castor oil, you thoroughly clean the affected area and dry it.

TURMERIC

Turmeric is an Indian spice used widely throughout the Asian countries for its precious medicinal properties and in foods for its unique flavor. Turmeric has long been a vital part of Indian Ayurvedic medicines.

The compound in Turmeric, which plays an active role and has good medicinal properties is curcumin. It has anti-inflammatory, antibiotic, antioxidant and anticancer properties, and is used to treat a variety of disorders including cysts in ovaries, cancers involving colon and pancreas, arthritis, psoriasis and various other skin diseases.
Clinical trials and studies have suggested that curcumin may also be used to treat parasitic infections as Malaria and also to some extent AIDS. For Hidradenitis Suppurativa, turmeric is one of the most potent nutrients that you can take.

Turmeric can be easily added in the diet and you will reap potent healing and anti-inflammatory benefits. Besides this, it also accelerates fat metabolism, so as to help obese and overweight persons. It has antioxidant properties that make it capable of helping in the detoxification of the liver. Its anti-inflammatory and anti-oxidant properties are extremely useful for the treatment of hidradenitis suppurativa.

**Choosing a turmeric supplement**

Most of the turmeric supplements you see in stores comes in the form of encapsulated powders. Unfortunately, the truth is with turmeric powder you may getting very little actual benefit.

Turmeric powder has a fairly low bioavailability (meaning that a good portion of it is not properly absorbed by your body), it often is not very fresh, and it's sometimes made with harsh processes that can destroy or degrade turmeric's healthful components.

**Unless you use the right formulation, turmeric will not reach the required levels in your blood stream that would be beneficial for inflammatory conditions such as HS.**

My personal recommendation is PuraThrive as they use a liposomalized form - meaning it's specifically blended to make the turmeric bind to phospholipids (fats) that increase bioavailability of turmeric 10 to 20 times. It is more expensive than powder forms, but you will need to use a much lower dose to see a benefit. I recommend using two drops per day, direct in the mouth or mixed with a beverage.

Click the link below to check out PuraThrive’s Liposomalized Turmeric: [http://www.fasthidradenitissuppurativacure.com/turmeric](http://www.fasthidradenitissuppurativacure.com/turmeric)
ASH OF ACACIA FLOWERS

Acacia is a treated mostly grows in Asian countries and desert areas. It has yellow and round flowers that have proved highly effective for skin diseases due to their anti-inflammatory properties. If its flowers are dried up and mixed in honey, they are elixirs for lesions and their balm on the scars also help in healing.

MARSHMALLOW

Marshmallow, also called sweet weed, is a native plant of Europe, North Africa and Western Asia. Dried and roasted marsh mallow root was used as an ingredient in marshmallow candy. Herbalists have since long recommended it for infected wounds and skin scars.

In fact, it comprises of tannins, volatile oils, and phenolic acids and is also rich in mucilaginous polysaccharides -- reason that it has soothing quality. It is an in-vitro antioxidant with antibacterial effects and above all no side effects at all. You can use its dried leaves mixed in water at the affected place twice a day.

GARLIC

Botanical called allium sativum, garlic has potent antibacterial, antiviral and antifungal properties. Eating three garlic cloves a day can cure this disease at its early stages Alternatively, get a garlic supplement. Other than that, it also possesses immune boosting properties to add to bodily defense mechanism.

CLEAVERS

A highly anti-inflammatory herb, cleavers is believed to support our lymphatic system to stop any disease. You can eat it or also use it directly on the skin.
GOLDENSEAL

Scientifically called hydrastis canadensis, goldenseal is another herb believed to fight infection and reduce inflammation in our body. If taken internally, it can immediately nip hidradenitis suppurativa in the bud. You can make a paste of it with water and apply it directly on the affected areas.

ECHINACEA

It is also called and mostly used internally. It is said to have antibiotic properties and strengthens our immune system.

2. VITAMINS AND MINERALS

Minerals and vitamins are very important for the human body. They function as key components of important processes and are essential for growth and repair of hair and skin. As hidradenitis suppurativa involves problems in the skin, the use of vitamins and minerals can help recreate the healthy skin tissue. By using these essential minerals and vitamins, the scars left on skin by the disease can be successfully treated without the use of any drugs, having adverse side effects.

VITAMIN C

Use of vitamin C supplements on daily basis can help you get relief from hidradenitis suppurativa. In fact, vitamin C plays an essential role in strengthening the immune system of the body, which in turn eliminates the inflammatory process. It also helps as an antioxidant and removes toxic substances as free radicals from the body by neutralizing them. It is important to remove these toxic substances that accumulate in the tissues, causing damage to them and also it interferes with the repair and healing processes.

In addition, this vitamin is crucial for wound healing, as it is used in the production of collagen. Take 1 gram daily.
VITAMIN E

Vitamin E is crucial for skin health. You can get capsules of vitamin E for internal use, open them, and apply externally by rubbing the oil on the skin lesions, usually before going to bed at night. External application onto the skin defect helps in the healing of the defect. The vitamin E oil also helps reduce inflammation, itchiness and redness associated with the lesions on skin, as it is an excellent moisturizer.

VITAMIN A

Vitamin A is crucial for skin health and its supplementation is widely used for acne, hidradenitis suppurativa, and other skin conditions. You can also get creams enriched with vitamin A. However, you should NOT use vitamin A supplements or creams if you are pregnant or currently planning to become pregnant.

ZINC

Zinc is making a breakthrough as a stand-alone cure for hidradenitis suppurativa. In a study carried out in France by Brocard et al. and reported in the 214(4) issue of Dermatology (2007), patients with hidradenitis suppurativa where given 90 mg of zinc gluconate per day. These patients had all tried conventional treatment before (medical and surgical), without success.

An improvement was observed in all patients. It was found that 36% of the patients experienced a complete remission while the remaining 64% experienced a partial remission. This is very impressive especially considering that these patients had exhibited no response to antibiotics, anti-androgens and surgery.
IODINE

Iodine is a mineral essential for the human body to function properly as the thyroid gland requires this nutrient to produce thyroid hormone for growth and development of the human body. It is also essential for the complete development and functioning of the brain. It is added to the salts used in flavorings and cooking to make food tasty and balanced. Most of the countries add iodine to water and other foodstuff to meet the basic requirements our body demands. Apart from its vital role in human body, iodine is an excellent antiseptic agent as it is a potent killer of infections of all kinds and is used to clean the skin prior to any operative procedures apart from cleaning wounds.

Iodine is also used for treating hidradenitis suppurativa. It is applied on the lesions or boiled directly, which causes the death of any bacteria present in the affected areas of the skin.

EPSOM SALTS

Epsom salt is a name given to magnesium sulfate found in water, and having very simple chemical formulae MgSO4-7H2O. The name Epsom was given to it, for it was first discovered from water through distillation process in the Epsom city of England.

Epsom salts are almost available everywhere as they are quite inexpensive and are an excellent remedy to be used for skin problems. They accelerate the healing process, improve the affected areas of the skin and provide relief from the disease.

Another effective home remedy is to take a hot bath with Epsom salts. Use Epsom salts in a tub of hot water; the quantity to be used is usually indicated on the container it comes in. Dip your body into the water containing Epsom salts, as it tends to pull out the infection and bacteria from the skin, leading to soothing feelings. It gives rise to relaxation, while healing the skin lesions and boils. Make sure you do not stay in the Epsom salt bath for more than 20 minutes. This application of Epsom salts is a very popular practice across the world.
3. HOMEOPATHIC APPROACH

Homeopathy is a branch of eastern medicine, which regards hidradenitis suppurativa as an inflammatory disorder -- a process that reflects a derangement in hormonal balance in our body. Homeopathy aims to treat the underlying cause of the disease rather than focusing on the external features of the disease as most of the allopathic medicines and surgeries do.

It offers a treatment without any adverse effects, and is cheap and natural. In fact, this approach focuses on strengthening the immune system of the body to aid the healing process by normalizing the hormonal disturbance that is regarded as the actual causative factor. It also removes the toxins accumulated in the body, makes the pH of the skin normal and boosts the blood circulation to the skin. The overall effect is a healthy normal skin with a decrease in the skin problems caused by this disease. Homeopathic treatment serves to stop recurrences, improves the skin condition, prevents secondary infection, stops the scarring process and also helps cope with the psychological issues associated with the disease.

Homeopathic medicines available for the treatment of hidradenitis suppurativa:

1. CALCAREA SULPH ALSO CALLED CALC-S

It is said to be highly effective for abscesses, acne, allergy, behavior disorders, croup, eczema, impetigo besides hidradenitis suppurativa.

It is also highly useful for abscess formation at any location, boils which open and drain a yellowish pus for days, weeks, or even months at a time, cystic tumors, cracks of the skin, worse winter and worse washing.

2. JUGLANS REGIA

Juglans Regia is another homeopathic remedy for hidradenitis suppurativa.
CHAPTER-6

CONCLUSION

Quick Action Guide

Here are the most important points you should do if you want to cure yourself of hidradenitis suppurativa:

1. Observe good hygiene and keep the affected skin clean.

2. In order to soften your skin, take warm showers.

3. Don't scrub the affected skin in a harsh manner. You should try to use a mild cleanser and engage in gentle rubbing.

4. Avoid tight fitting clothes and wear clean undergarments.

5. Don't shave the affected area, as it will cause irritation.

6. Don't pick on, scratch, or squeeze the nodules of the disease on your skin. This may cause scarring and infection.

7. Use clean towels, and wash your pillowcases and bed sheets on a regular basis. This will avoid bacterial re-infection.

8. If you engage in any sort of physical workout, take shower immediately. This is because the combination of sweat and skin oils will trap bacteria in your pores.

9. Apply ice packs to inflamed areas to control the inflammation and get some pain relief.

10. Include fresh fruits and vegetables to your diet and eat more oily fish. If you dislike fish, take a daily omega 3 supplement.

11. Drink loads of water to detoxify your body and keep yourself well hydrated. Consume at least 8 glasses of water daily.
12. Try to lose excess weight in order to avoid unnecessary rubbing between skin areas.

13. Stop smoking and avoid excessive alcohol consumption!

14. Limit your intake of saturated fat, trans fat, and simple sugar.

15. Take a zinc gluconate supplement at 90mg daily.

16. Take vitamins C, E and A (but avoid vitamin A if you are pregnant or currently trying to become pregnant).

17. Drink parsley tea daily to speed up the healing of lesions.

18. Include turmeric in your daily diet.

19. Squeeze fresh lemon juice on the affected area before going to bed - it will sting, but it works wonders for wound healing.

20. Apply tea tree oil on boils and abscesses.

CONCLUDING REMARKS

As said earlier, hidradenitis suppurativa is a chronic inflammatory skin disease, which affects specific anatomical regions in the body -- most commonly the axillary and inguinal regions of the body. Characterized by follicular occlusion which appears as comedones, redness, rash and painful nodules, this disease takes a heavy toll on the patients. With further progress, it leaves lasting impacts not only psychologically, but also physically in the shape of scars on different body parts.

Hidradenitis suppurativa is a very painful condition with high reoccurrence rates. The treatment options available for hidradenitis suppurativa include therapeutic and surgical treatment as discussed briefly in the second chapter. Therapeutic treatment includes the use of appropriate antibiotics, anti-inflammatory drugs, immunosuppressive drugs,
corticosteroids and other medications. It is usually indicated in the acute or early phases of the disease.

The surgical therapy consists of radical excision of the lesion extending beyond 2cm from the borders of the infected tissue and up to a depth of 5cm involving the fascia. Other surgical methods imply the use of carbon dioxide lasers. Surgical treatment is the definitive therapy and has been implicated to reduce the reoccurrence of the disease to some extent. However, they have their own side effects -- hence why the natural and home remedies are a safer option.

These include hydrotherapy and use of essential vitamins and minerals. Homeopathic treatments are also available which help to eradicate the disease, with essentially zero complications as the therapy is based on natural ingredients. Possibly the two most powerful remedies from all those mentioned in this book are the supplementation of zinc gluconate at 90mg daily (this is in fact being used as a stand-alone therapy), and the use of fresh lemon juice on the area.

In order to manage the disease process and accelerate the curing procedure, diet and lifestyle modifications are necessary. It is imperative to consume a diet rich in anti-inflammatory foods and low in inflammatory foods. It is also crucial that you quit smoking, as this is one of the main triggers of flare-ups.
GLOSSARY OF TERMS

Abscess: A closed pocket containing pus. Some abscesses can easily diagnosed, as they are painful, but deep and chronic abscesses may just look like a tumor.

Acne: a chronic disorder of the hair follicles and sebaceous glands. Acne is characterized by black heads, pimple outbreaks, cysts, infected abscesses, and scarring.

AK: Actinic Keratosis: They are small, dry, scaling lesions and occur on sun-exposed areas of the skin.

Albinism: A rare and inherited disorder occurs due to total or partial lack of skin color or pigmentation.

Alopecia: Scientific name of baldness.

Atopic dermatitis: It is also called eczema -- a skin disorder characterized by itching, scaling, thickening of the skin, and is usually located outer body parts.

Atypical: In a diagnosis, atypical is a warning to the physician that the pathologist is worried about something.

Basal Cells: These cells are found in the outer layer of skin, and they are responsible for producing the squamous cells.

Biopsy: It is a technique utilized to help the clinician diagnose an existing lesion, rash, or other dermatological condition.

Blister: A fluid-filled bump.

Boil: A tender, swollen area that form around hair follicles.

Bullous: A large blister.
**Carbuncles**: Clusters of boils are called carbuncles.

**Carcinoma**: A malignant cells appear to be derived from epithelium.

**Cellulitis**: A bacterial infection of the skin characterized by swelling and tenderness.

**Chemical Burns**: Burns due to strong acids or alkalines.

**Cold Sore**: Small blisters appear around and in the mouth caused by the herpes simplex virus.

**Collagen**: A protein produced by skin cells that provide strength to the skin.

**Contact Dermatitis**: A viral rash or an inflammation of the skin.

**Crust**: A formation of dried blood, pus, or other skin fluid at some point.

**Cryosurgery**: The use of liquid nitrogen to destroy visible skin lesions.

**Cyst**: A deep lesion filled with pus or other contents.

**Dermatitis**: A number of skin conditions characterized by inflammation.

**Dermatofibroma**: Small, red or brown bumps on the skin.

**Dermis**: The middle layer of skin made up of blood vessels, lymph vessels, hair follicles, and sweat glands.

**Eczema**: A skin disorder characterized by itching, scaling and thickening of the skin.

**Electrical burns**: Burns due to contact with an electrical current.

**Epidermis**: The outer layer of skin made up of the horny layer, squamous cells, and basal cells.
**Epithelium:** A special type of tissue normally lines the surfaces and cavities of the body.

**Erythrasma:** A skin infection of the top layer of skin.

**Excision:** It involves the use of a local anesthetic and the removal of a skin lesion by use of a surgical scalpel.

**Excisional Biopsy:** A surgical scalpel used to excise a small portion of the tissue for analysis.

**Exanthem:** A type of rash.

**Excoriation:** An area on your skin covered by a crust, or scab.

**Extraction:** A method of removing skin lesions such as milia or comedones on the face.

**Fibrous Papule:** A benign, small, firm, skin colored inflammation.

**Folliculitis:** An inflammation of the hair follicles due to an infection.

**Freckles:** Dark and flat spots that appear only on sun-exposed skin.

**Hemangioma:** A benign tumor of dilated blood vessels.

**Herpes Zoster:** A common viral infection of the nerves, accompanied by a painful skin rash of small blisters.

**Hidradenitis Suppurativa:** It is a skin disease that most commonly affects areas bearing apocrine sweat glands or sebaceous glands.

**Hyfrecator:** It is a small electrode that uses heat to destroy skin lesions.

**Immune system:** A collection of cells and proteins that works to protect the body from outer harmful agents.
**Impetigo**: A bacterial skin infection that shows microscopic pus-filled blisters.

**Inflammation**: Redness, swelling, heat, and pain in a tissue due to chemical or physical injury.

**Keloid**: Firm and elevated scar tissues other than normal tissues.

**Keratinocytes**: Also called squamous cells are the primary cell types found in the epidermis.

**Keratosis Pilaris**: A common skin condition characterized by small, pointed bumps.

**Kerion**: A large inflamed tender lesion.

**Lentigines**: Brown spots consisting of increased numbers of epidermal melanocytes.

**Lichenification**: Thickened skin.

**Lipomas**: Round or oval lumps under the skin caused due to fat.

**Macular Stains**: Faint, red marks that appear in the skin at birth. Angel's kisses are marks on the forehead and eyelids. Stork bites are marks on the back of the neck.

**Macule**: The smaller version of a patch.

**Malignant Melanoma**: A rare but deadly skin cancer that begins as a mole.

**Melanocytes**: Cells present in the epidermis that produce melanin.

**Melasma**: Dark, brown, symmetrical patches of pigment on the face.

**Milia**: Tiny, white, keratin filled cysts occurring on the face.

**Mongolian Spots**: Bluish-black marks on the lower back and buttocks; affects mainly African-American or Asian children.
**Nevus:** A discoloration of the skin due to pigmentation commonly known as a mole.

**Nodule:** A solid, raised bump.

**Paronychia:** A skin infection around a finger or toenail.

**Patch:** A discolored spot.

**Pathology:** The interpretation of a specimen to determine the cause illness in the skin.

**Prickly Heat:** Rashes caused by trapped sweat under the skin.

**Psoriasis:** A chronic skin condition that causes inflamed, red, raised areas.

**Purpura:** A condition of the skin characterized by hemorrhages.

**Pustule or Pimples:** Inflamed lesions that look like pink bumps.

**Pyogenic granuloma:** Red, brown, or bluish-black raised marks.

**Radiation burns:** Burns due to prolonged exposure to ultraviolet rays.

**Rosacea:** A common facial skin condition that causes redness, pimples, and broken blood vessels.

**Salicylic Acid:** A keratolytic drug used to treat various skin conditions.

**Scabies:** An infestation of mites in the skin causes small pimples.

**Scales:** Dead skin cells.

**Scar:** Fibrous tissue that has formed after a skin injury.

**Seb Derm:** Inflammation of the scalp consisting of dry, scaling lesions.

**Sebaceous Glands:** Glands in the skin that secrete oil to the surface.
**Sebaceous Hyperplasia**: Benign, elevated, soft, yellowish, raised bumps.

**Shave Biopsy**: A technique using a small flexible blade to shave the surface of the lesion for analysis.

**Skin Exam**: A dermatology examination, involving an assessment of the patient's entire skin surface.

**Spider Angioma**: A bright red mark with a distinct dark spot in the skin.

**Squamous Cell Carcinoma**: A form of skin cancer.

**Subcutis**: The deepest layer of skin.

**Thermal Burns**: Burns due to external heat sources.

**Thrush**: A fungal infection of the mouth.

**Tinea Versicolor**: A common fungal skin infection.

**Toxic Epidermal Necrolysis**: A life-threatening skin disorder characterized by blistering.

**Urticaria or Hives**: A condition in which red, itchy, and swollen areas appear on the skin.


55. Webster, GF. Acne vulgaris: state of the science [editorial; comment]. Arch Dermatol 1999; 135:1101.


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