

# TREATMENT OF HYPERHIDROSIS

**Dr Juri Kirsten** discusses an innovative method for the treatment of axillary hyperhidrosis, using radiofrequency microneedling



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**T**HE USE OF radiofrequency (RF) microneedling systems in aesthetic medicine has grown substantially. The technology has been widely used for wrinkles, cutaneous ptosis, the treatment of acne and acne scars, skin tightening and stretch marks, among many other treatment possibilities.

Ilooda's RF microneedling system, 'Secret RF' is one of the products of the year in skin aesthetics, and transmits RF energy deeply into the skin layer (3.5mm) in a minimally-invasive fashion.

The author has much experience of using Secret RF to treat axillary hyperhidrosis. Approximately 1-2% of Germans suffer from hyperhidrosis, and in the US, around 4% of the population experiences hyperhidrosis, with 17% also distressed with regard to excessive armpit perspiration.

The causes of over-perspiration are largely divided into hyperhidrosis as a result of secondary diseases (e.g. thyroid disease, diabetes, hormonal conditions), or primary hyperhidrosis attributed to the functional disorder of the sweat glands. In cases seen at the author's hospital, perspiration generally exceeds 4-5 times that of normal sweat production, which severely impacts the quality of life of the patient.

There are a number of treatment possibilities available for hyperhidrosis. Antiperspirants based on aluminium chloride, which lessen perspiration by narrowing or stopping the sweat gland excretory



**Figures 1-3** Remittent erythema and oedema after treatment

drift temporarily, can be used. Iontophoresis has also been used for many years to treat palmoplantar hyperhidrosis, but is not a preferred method for axillary hyperhidrosis.

The second most frequently used treatment method for hyperhidrosis is injections of the botulinum toxin A. Botulinum toxin inhibits the secretion of acetylcholine and blocks the nerve fibre that stimulates the sweat gland. This therapy is effective, but costly and does not last long.

The third most frequently used therapy is surgical removal of the sweat gland. For a number of years, the author conducted a sweat gland suction curettage using a special micro-tube (hollow needle) in addition to traditional curettage of sweat gland. This method is effective, but requires patience and significant downtime. In the author's experience, reoccurrence of the condition accounts for approximately 18-20% of patients following this method of treatment.

For these reasons, the author and his colleagues have searched an innovative method that can provide the following requirements:



- Outpatient treatment by local anaesthesia
- High result at time of reduced number of sweat glands
- Shortest recovery time
- Long-term efficacy
- Economic efficiency and profitability

These requirements were met with the RF microneedling system Secret RF, which was already present in our hospital. As a result, the author is able to treat axillary hyperhidrosis as follows.

## Step 1

Take an iodine strength test on the armpit for an accurate location measurement of excessively active sweat gland(s) before commencing treatment. Through this process, the location of treatment can be effectively



**Secret** RF

distinguished as the active sweat gland will turn dark blue or black.

### Step 2

Administer local anaesthetic (xyloest 1% plus adrenalin 1:200 000 10ml).

### Step 3

The skin area is treated in two stages, using this minimally-invasive treatment (heat with 25 gold-plated 30G needles). For one stage, the treatment is conducted at a depth of 3.5mm with a duration time of 300 milliseconds, and for the second stage, impact duration time is to be reduced to 250ms and conducted at a depth of 2mm.

The mechanism of Secret RF is based on supplying bipolar RF energy, with support of the needles into the location of the sweat glands deep in the skin. The heat produced destroys the sweat gland irreversibly. This is done in the subcutaneous tissue, without damaging the epidermis, which can be controlled by the retardation time of RF in the device. The needles enter and exit the skin via a punching system at a rhythm of 1/1000 second. The RF impact is applied for a touch of 1/1000 second in order to provide heat after the needles reach the desired layer of the skin. The needles are cold while they are in the skin.

### Step 4

The treatment is repeated over a period of 4-6 weeks. A little erythema and oedema appear immediately after treatment. Minor tests validate

“This new therapy for the treatment of axillary hyperhidrosis, using Secret RF, allows for an innovative treatment method.”

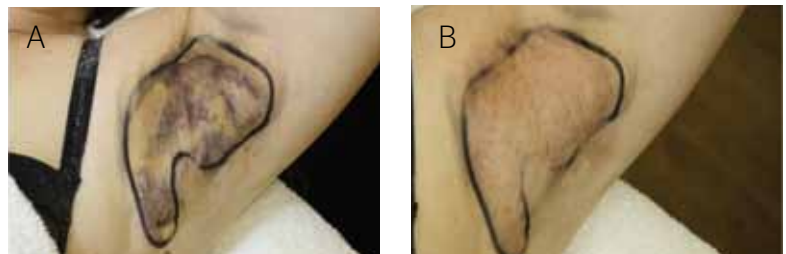


Figure 4 (A) Before and (B) after two treatment sessions of Secret RF

the result from the first treatment session, with the treatment cycle ending as soon as the iodine strength test confirms a great result. A third treatment is rarely required.

Similar to all surgical treatments, there are side-effects, such as transient erythema, tenderness, oedema and a dot-shaped shell formation after treatment; all of which diminish in 1-2 weeks. The author's patients reported few adverse effects and found that side-effects did not interfere with daily activities. Thirty percent of patients will also find that they no longer have armpit hair. However, all those who have been treated thus far have felt a sense of relief.

### Conclusions

This new therapy for the treatment of axillary hyperhidrosis using Secret RF allows for an innovative treatment method. This provides a very effective alternative compared with sweat gland suction curettage, as well as the traditional botulinum toxin treatment.

The treatment cycle comprises two stages, free from side-effects, every 4-6 weeks. Overall, the result shows a high degree of satisfaction in all patients. The removal of the sweat glands using Secret RF is permanent and final since the sweat gland cannot be restored.

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