



Myrrh for treatment of severe vulvar edema in ovarian hyperstimulation syndrome[☆]



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ARTICLE INFO

Keywords:

Ovarian hyperstimulation syndrome
Myrrh
Herbal medicine
Herbs
Commiphora

ABSTRACT

Background: Severe vulvar edema is a rare entity occurring with ovarian hyperstimulation syndrome. This edema can be incapacitating; causing pain and limited patient mobility. With the usual conservative approach, vulvar edema can take several days to resolve.

Aim: The aim of this case report is to describe the use of local myrrh for the management of severe vulvar edema associated with ovarian hyperstimulation syndrome.

Case Presentation: 29-year-old female with severe vulvar edema associated with ovarian hyperstimulation syndrome.

Conclusion: Local myrrh application for severe vulvar edema in ovarian hyperstimulation syndrome resulted in substantial improvement, and with further studies, myrrh could be used as an option for the management of vulvar edema.

1. Introduction

Ovarian hyperstimulation syndrome is an iatrogenic complication of assisted reproductive technologies [1]. With a reported incidence of 1% to 5% in its moderate and severe forms, it can be life-threatening with 1.9% cases requiring hospitalization [1,2]. Although there is no agreed upon definition, the disorder is characterized by marked cystic ovarian enlargement, fluid shifts from intravascular compartment resulting in ascites and hydrothorax, electrolyte imbalance, hemoconcentration, hypercoagulation, and impaired renal perfusion [1,2].

Risk factors for ovarian hyperstimulation syndrome include young age, history of ovarian hyperstimulation, or polycystic ovarian syndrome [1].

Risk reducing strategies include coasting, cycle cancellation, cryopreservation of embryos, low-dose hCG instead of FSH, GnRH agonist for final follicular maturation instead of hCG, and cabergoline [3]. Cabergoline is particularly useful as it does not seem to decrease implantation rate and can be used in all high risk women [3].

The first case of vulvar edema associated with severe ovarian hyperstimulation syndrome was described in 1995 by Coccia et al. [4]. Their patient had massive vulvar edema associated with fissures [4]. Her management was conservative with human albumin, lactated Ringer's, and heparin [4]. The vulva was back to normal after one week

of treatment which consisted of ice packs, topical hydrocortisone, and twice daily topical gentamicin [4].

Our patient also had severe vulvar edema that was painful and prevented her from mobilization. She was conservatively treated with local application of ice packs and Myrrh. It was surprising that the edema which was deferring the patient from moving around easily was resolved in two days.

It's quite common for herbal medicine to be used in Saudi Arabia [5]. People still strongly believe in the role of herbs with Myrrh being one of the most commonly used herb in the Arabian Peninsula [5]. Myrrh is constituted of volatile essential oils, sesquiterpenes, and a water soluble gum [5]. In large doses it may be unsafe and may affect the kidney and the heart [5]. It poses analgesic, anti-inflammatory, antiseptic, antifungal, antispasmodic, astringent, carminative, emmenagogue, expectorant, and anti-hyperlipidemic effects [5]. We are reporting a case of severe vulvar edema treated with local myrrh application. Patient approved the use of the picture for educational and research purposes. Institutional review board approval was obtained to report the case.

2. Case Report

Our patient is a 29-year-old, G2P0 + 1 who was referred to our

[☆] Disclosure, conflict of interest: The authors have nothing to disclose and there was no any funding for the study; there are no conflicts of interest. The work was not presented at any of the meetings.

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Fig. 1. Vulvar edema after beginning of treatment with partial improvement.

tertiary center as a case of severe ovarian hyperstimulation syndrome. She had undergone in vitro fertilization 18 days prior to her presentation in a private institute. She received gonadotropins and human chorionic gonadotropin in her treatment cycle.

On her arrival to the emergency department, patient was complaining of diffuse abdominal distension, vomiting, and severe shortness of breath. She was also complaining of severe vulvar swelling limiting her mobility (Fig. 1). On assessment patient was in distress, abdomen was tense and distended, fluid thrill and shifting dullness were positive.

Patient was admitted to the gynecology ward as a case of severe ovarian hyperstimulation syndrome. She was closely observed with daily measurement of her weight, abdominal girth and daily labs including complete blood counts with platelet, coagulation screen, kidney and liver profiles. She was monitored for input and output with strict charting. She was also given analgesia, low molecular weight heparin, insulin and folic acid.

Ultrasound showed a uterus that is normal in size, shape and texture. Right ovary measured $15 \times 9.8 \times 12$ cm with multiple cysts, and the left ovary measured $16 \times 9.4 \times 12$ cm. Additionally, marked ascites was reported. Patient had low albumin and her electrolytes were normal.

An 8 French catheter abdominal drain was inserted by the interventional radiology under ultrasound guidance. After the drainage of ascitic fluid, the patient started to improve. Her breathing was better, and her abdomen became soft but remained distended. The total amount of fluid drained was seven liters.

Her vulvar edema (Fig. 1) was managed with ice packs, and local myrrh which was dissolved in warm water and applied locally. There was complete resolution of edema in two days. Patient was also kept in Trendelenburg position to help decrease the swelling. She gradually improved and was able to mobilize. Ultrasound (Figs. 2, 3) was repeated during her admission and showed two small intrauterine gestational sacs, and enlarged ovaries. She was discharged home after one week in a stable condition.

3. Discussion

A dangerous complication of ovarian stimulation is ovarian hyperstimulation syndrome (OHSS) [6]. It consists of cystic enlargement of ovaries, increased capillary permeability and fluid shift into the third space [6]. Consequently, OHSS leads to hemoconcentration, hypoxia and hemodynamic instability [7]. The syndrome is activated through an increase in hCG that causes an increase in vascular endothelial growth



Fig. 2. Ultrasound image of patient's right ovary.



Fig. 3. Ultrasound image of patient's left ovary.

factor, which then stimulates the vascular endothelium [2]. Although vascular endothelial growth factor (VEGF) has a major role in the development of OHSS, other factors may play a role including VEGF's soluble receptor sFlt-1, other cytokines and growth factors [7].

In an attempt to reduce the risk of ovarian hyperstimulation syndrome, a number of measures have been attempted including the use of GnRH antagonist protocol, coasting and Cabergoline [6]. Coasting, in which gonadotropin administration is stopped, is the most often used [6]. It is important to keep in mind that a longer duration of coasting (more than three days) is associated with a decrease in the number of oocytes collected, implantation and clinical pregnancy rate [6].

In 1996, Luxman et al. described nine cases of unilateral vulvar edema following paracentesis in patients with severe ovarian hyperstimulation syndrome [8]. They believed that a fistulous tract was created by the needle when the lower abdomen was the puncturing site [8]. Ascitic fluid was forced due to increased intraabdominal pressure into the subcutaneous tissue, leading to unilateral vulvar edema [8]. The patients were treated conservatively and the edema was resolved within 10 days [8]. Another case of bilateral vulvar edema following bilateral paracentesis was described by Vavillis et al. [9].

Our case describes bilateral severe vulvar edema in a patient with severe ovarian hyperstimulation syndrome. The edema was severe enough to cause pain and prevent the patient from ambulation. Our patient was treated conservatively and was given myrrh to apply directly to the edematous vulva. This greatly helped in accelerating the resolution of the vulvar edema, and by the time of discharge, she was ambulating without difficulty.

We believe that myrrh, due to its astringent properties, can be used to help accelerate the resolution of vulvar edema in patients. Further

studies are needed to assess the benefits of such treatment for similar cases of OHSS.

4. Conclusion

Myrrh's use has shown a beneficial effect in the acceleration of resolution of vulvar edema and may with further studies be used to treat more patients.

Disclosure

We have nothing to disclose and the patient consented to the publishing of the image and material. There were no funds received.

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