Rare Case of Secondary Infertility

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ABSTRACT

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35 year old patient reported with irregular periods and secondary infertility evaluation. Since her last delivery she used to get periods once in only 3 to 6 months. On tracing through her obstetric history, she had a full term normal delivery about 10 years back elsewhere. Soon after delivery she suffered from severe atonic post partum haemorrhage and about 3 to 5 units of blood was transfused then. Since then she had to face unfortunate events. She could not breast feed her baby. She was suffering from amenorrhea, dryness of vagina, dyspareunia etc. Meanwhile she was detected to have hyperglycemia and was put on oral hypoglycemic agents.

Sheehan's Syndrome, also known as Postpartum Hypopituitarism or Postpartum Pituitary Necrosis, is a condition in which hypopituitarism develops after severe bleeding ('postpartum hemorrhage') during or immediately after childbirth. Sheehan's Syndrome is mainly diagnosed by low levels of TSH, ACTH, FSH, and LH with low levels of T4, cortisol, and estradiol in the blood.

Treatment is essentially by replacing the hormones that the pituitary gland fails to produce. Hormones like corticosteroids, thyroid hormones and estrogens and medicines to control diabetes become necessary to maintain normal functioning of the body. Any minor illnesses like influenza or even a common cold can cause a crisis and may require adjustment of these hormones.

Keywords: Post partum haemorrhage, Post partum pituitary necrosis, Sheehan's syndrome

*See End Note for complete author details

Mrs. S reported to our assisted conception unit for secondary infertility evaluation. She was aged 35 years married for 10 years. Her primary complaint was irregular cycles. Since her last delivery she used to get periods once in only 3 to 6 months. On tracing through her obstetric history, she had a full term normal delivery about 10 years back elsewhere. Soon after delivery she suffered from severe atonic post partum haemorrhage and about 3 to 5 units of blood was transfused then. Since then she had to face unfortunate events. She could not breast feed her baby. She was suffering from amenorrhea, dryness of vagina, dyspareunia etc. Meanwhile she was detected to have hyperglycemia and was put on oral hypoglycemic agents.

On evaluation, she was an average built lady with BMI 27kg/m^2 . Her FSH value was 5.8, LH was 5, serum prolactin was 3.8 IU/L, thyroid function test was within normal limits. Transvaginal sonography was done for her which showed 7.1 x3.6 cm size uterus, ovaries with normal size and volume. According to her she used to get only withdrawal bleeding. We resumed her cycles with progesterone preparations and from third day of her cycles ovulation induction was done with pure follicle stimulating hormone preparations 75 IU per day for first 6 days. But her response to FSH was poor and hence combined with preparations containing both FSH and LH and the dose was also subsequently increased. Her follicular response was satisfactory and she ovulated on 21st day of her cycles. Mr. S was found to have mild oligoasthenospermia also. Hence Intrauterine insemination was done for her in the same cycle. Luckily she conceived in that cycle and pregnancy is ongoing.

SHEEHAN'S SYNDROME

Sheehan's Syndrome, also known as Postpartum Hypopituitarism or Postpartum Pituitary Necrosis, is a condition in which hypopituitarism develops after severe bleeding ('postpartum hemorrhage') during or immediately after childbirth. The incidence of Sheehan's syndrome has decreased with better health care during childbirth and delivery but is still about 0.5% of all cases of hypopituitarism in women. Blood loss generally has to be more than 800ml for Sheehan's Syndrome to develop. But in certain women, even minimal bleeding seems to cause this condition.

Cause of Sheehan's Syndrome

Sheehan's syndrome occurs due to necrosis of the anterior lobe of the pituitary gland.

This part of the gland secretes important hormones

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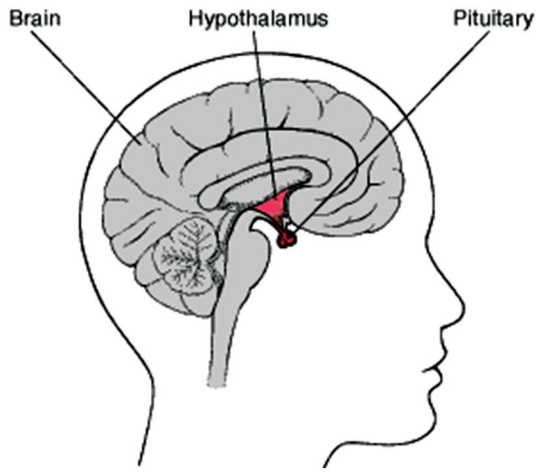

Figure 1. **Location of Pituitary Gland**

like the ACTH, TSH, FSH, LH, growth hormones, endorphins and prolactin. During pregnancy, the anterior pituitary lobe increases greatly in size since it is required to secrete larger amounts of these hormones, especially FSH, LH and prolactin. Prolactin is required to help the breasts grow and secrete breast milk during breastfeeding the baby. The level of prolactin reaches a peak about 1 -3 weeks after childbirth.

The blood supply of the gland does not increase simultaneously with the enlarging size of the gland. Due to this irregularity, the blood supply to this part of the pituitary gland is in a compromised state during pregnancy. If heavy bleeding occurs at any time during or after pregnancy or childbirth, the blood supply becomes inadequate and the cells undergo necrosis. It is also believed that the acute loss of blood causes spasm in the arteries supplying the anterior pituitary leading to further necrosis. The secretion of all the hormones produced by the anterior pituitary (ACTH, TSH, FSH, LH, growth hormones, endorphins and prolactin) is affected to a greater or lesser extent.

Symptoms of Sheehan's Syndrome

The symptoms depend on the degree of necrosis of the cells.

No Symptoms: In very mild Sheehan's syndrome, there may be any symptoms at all. The woman may complain of vague feelings of ill health or fatigue which are often passed off as the after effects of childbirth, or being due to anemia, or poor nutrition.

First Symptoms after childbirth: In a moderate degree of Sheehan's syndrome, the first signs usually appear within the first few months after childbirth. The woman fails to initiate breastfeeding and secrete breast milk even after putting in her best efforts. The breasts and genital organs show signs of atrophy.

Later Symptoms after childbirth: There is failure of menstruation and the condition is often discovered when there is no menstruation ('amenorrhea') even after a considerable length of time after childbirth. There is also loss of pubic and axillary hair.

Symptoms of a full blown Sheehan's syndrome: In a fully developed Sheehan's syndrome, the main symptoms are due to suppression of the thyroid gland (hypothyroidism) and the adrenal glands (Cushing's disease and Addison's disease). The woman typically has a pale, puffy face, coarse scanty hair, cold sensitivity, weight gain, low blood pressure, slow mental functions and delayed response to stimuli. Sometimes, there may be overt psychological disturbances. The breasts and genital organs are atrophied with absent pubic and axillary hair. Insulin tolerance may be reduced and Type I diabetes may occur.

DIAGNOSIS OF SHEEHAN'S SYNDROME

Sheehan's Syndrome is mainly diagnosed by low levels of TSH, ACTH, FSH, and LH with low levels of T4, cortisol, and estradiol in the blood. Low levels of IGF-I suggest GH deficiency.

MRI and CT scans should be carried out to evaluate the size of pituitary gland and for other causes of hypopituitarism like pituitary tumors.

TREATMENT OF SHEEHAN'S SYNDROME

Treatment is essentially by replacing the hormones that the pituitary gland fails to produce. Hormones like corticosteroids, thyroid hormones and estrogens and medicines to control diabetes become necessary to maintain normal functioning of the body. Any minor illnesses like influenza or even a common cold can cause a crisis and may require adjustment of these hormones.

TREATMENTS AND DRUGS

Treatment for Sheehan's syndrome is lifelong hormone replacement therapy. Your doctor may recommend one or more of the following medications:

Corticosteroids: These drugs, such as hydrocortisone or prednisone, replace the adrenal hormones that aren't being produced because of an adrenocorticotropic hormone (ACTH) deficiency. You'll need to adjust your medication if you become seriously ill or experience

major physical stress. During these times, your body would ordinarily produce extra cortisol — a stress hormone. The same kind of dosage fine-tuning may be necessary when you have the flu, diarrhea or vomiting, or have surgery or dental procedures. Adjustments in dosage may also be necessary during pregnancy or with marked weight gain or weight loss.

Levothyroxine (Levoxyl, Synthroid, others): This medication boosts deficient thyroid hormone levels caused by low or deficient thyroid-stimulating hormone (TSH) production.

Estrogen: This may include estrogen alone if you've had your uterus removed (hysterectomy) or a combination of estrogen and progesterone if you still have your uterus. Estrogen replacement can be administered with either pills or patches. If you've become infertile, preparations containing luteinizing hormone (LH) and follicle-stimulating hormone (FSH), also called gonadotropins, can be administered by injection to stimulate ovulation.

Growth hormone: Some studies have shown that replacing growth hormone in women with Sheehan's syndrome — as well as in people with other forms of hypopituitarism — can help normalize weight, lower cholesterol levels and improve overall quality of life.

Your endocrinologist is likely to test your blood regularly to make sure that you're getting adequate — but not excessive — amounts of any hormones that you take. Generally, hormone levels are checked every few weeks or months at the beginning of treatment and then once a year thereafter.

END NOTE

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