

Spontaneous Successful Pregnancy in Post-Surgical Hypopituitarism: A Case Report

Postoperatif Hipopituitarizmde Spontan Başarılı Gebelik: Olgu Sunumu

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Abstract

Pregnancy in patients with panhypopituitarism is rare and considered high risk. Since the availability of ovulation induction with gonadotrophins, women with established hypopituitarism can expect near normal fecundity and the pregnancy outcome is better with support of the replacement of deficient hormones. We present a case of non-functioning pituitary macroadenoma, who after pituitary surgery developed hypopituitarism. The patient had secondary amenorrhea as part of hypopituitarism and was on thyroxine, prednisolone and a combination of estrogen and progesterone. She conceived and carried her pregnancy to the term. Elective caesarean section was done at 37 weeks and both infant and mother are well. The case highlights the rarity of the phenomenon and the safe outcome of the pregnancy with proper replacement. *Turk Jem 2010; 14: 23-5*

Key words: Pregnancy, hypopituitarism, pituitary macroadenoma, hypogonadotrophic hypogonadism, ovulation induction

Özet

Pan-hipopituitarizm hastalarında gebelik nadirdir ve yüksek risk taşır. Gonadotropinlerle ovulasyon induksiyonunun mümkün olmasıyla hipopituitarizm tanısı konulan kadınlar neredeyse normal doğurganlık, ve eksik hormonların replasmanı ile daha iyi bir gebelik neticesine ulaşabilirler. Bu çalışmada hipofiz cerrahisi sonrasında hipopituitarizm gelişen nonfonksiyonel hipofiz makroadenomlu bir olgu sunulmaktadır. Hasta tiroksin, prednisolon ve östrojen ve progesteron kombinasyonu ile tedavi edilmekteyken gebelik kamış ve gebeliğini sonuna kadar sürdürmüştür. Hasta gebelik kaldı ve gebeliğini terme kadar taşıdı. Otuzyedinci haftada elektif sezaryen ile doğum yapan anne ve bebek sağlıklı idi. Bu olgu, bu fenomenin nadirliğini vurgulamakta ve doğru replasmanla güvenli gebelik sonucuna ulaşabileceğinin altını çizmektedir *Türk Jem 2010; 14: 23-5*

Anahtar kelimeler: Gebelik, hipopituitarizm, pituitar makroadenom, hipogonadotropik hipogonadizm, ovulasyon induksiyonu

Introduction

Pregnancy in patients with panhypopituitarism is rare and associated with high risk of abortions, fetal and maternal mortality (1-3). With the availability of recombinant gonadotrophins, pregnancy has been achieved with newer treatment protocols, but the information about its outcome is scant (4). Review of data about women who conceived after ovulation induction over the last 2 decades showed high rate of miscarriages with live birth rate of 61%. (5). There also have been some reports of spontaneous pregnancy in patients with hypopituitarism, but data on the pregnancy outcome in these reports is scarce (6,7). We report a subject, who conceived spontaneously 15 months after post-surgical hypopituitarism. She had uneventful pregnancy and delivered a healthy baby by caesarean section.

Case Report

A 35-year-old lady had her 1st child birth three years before. It was a normal delivery without any history of postpartum hemorrhage; she did not resume cycles after that. She had noticed headache and visual disturbances 4 months before. Clinical examination at that time revealed temporal visual field defect with optic disc pallor on the left side. The rest of the examination was unremarkable. Hormonal analysis was suggestive of central hypothyroidism with appropriately normal gonadotrophins and normal prolactin levels (Table 1). Contrast-enhanced MRI of the pituitary revealed 2.9x2.5 cm mass lesion extending from intrasellar to suprasellar region abutting the optic chiasm (Figure 1). A diagnosis of nonfunctioning pituitary (NFP) macroadenoma was made. The patient

commenced replacement therapy with Levothyroxine and steroids and was subsequently subjected to transsphenoidal microsurgical tumor excision. Post-operatively she was followed with clinical, biochemical assessment and imaging. There was no evidence of hyperprolactinemia, diabetes insipidus, visual defects or any residual sellar tumor on MRI (Figure 2). Post-operatively she had low serum 8AM cortisol and Thyroxine (T4) and was put on L-thyroxine 100 µg/day and prednisolone 5 mg daily. Her secondary amenorrhoea persisted; since there was no bleeding to progesterone challenge and the patient was put on cyclic conjugated estrogen (0.625 mg) and medroxyprogesterone (10 mg) (EP) for 4 months.

She presented to us with failure of withdrawal bleeding to cyclic estrogen-progesterone (EP) therapy for preceding 3 cycles. USG abdomen revealed a viable fetus of 12 weeks with no fetal anomalies. The patient opted to continue the pregnancy and was followed very closely with replacement of increasing doses of thyroxine and prednisolone. During the course of her pregnancy, she developed mild glucose intolerance, which was managed by diet distribution, otherwise her pregnancy remained uncomplicated. She was subjected to elective caesarean section at 38 weeks of gestation. During delivery,

she was given intravenous hydrocortisone infusion, usual doses of thyroxine with intensive intra-operative monitoring. A healthy alive 2.9 kg female baby was delivered with an Apgar score of 10. The monitoring was continued post-operatively for 72 hours. Subsequently, injectable steroids were tapered and overlapped with oral steroids. She presently continues to be on L-thyroxine 100 µg and 5 mg of prednisolone daily. Both mother and baby were followed closely and were well, 6 months later. Mother successfully lactated for the initial 4 months with supplemental feeds and repeat pituitary MRI showed empty sella. Two years later, she continues to be amenorrhic and needs EP for withdrawal bleeding.

Discussion

Pregnancy in patients with underlying hypogonadotrophic hypogonadism is uncommon (1). Conception is reported in these patients occurring either spontaneously or with ovulation induction, but carrying successfully through to term is difficult, especially in the later condition (3, 6). Overton et al. reported an experience of 18 patients from a single center with live births in 61%, miscarriage in 28% and mid-trimester uterine death rate in 11%. The author also reported high rate of fetal loss in twin

Table 1. Preoperative and postoperative hormone profile of the subject

Hormone (Units)	Preoperative	Postoperative	Reference range
Free T 3 (Pg/ml)	2.63	2.12	2.30-4.20
Free T 4 (ng/ml)	0.96	0.65	0.89-1.80
TSH (µIU/ml)	1.296	8.50	0.350-5.500
Serum Cortisol 8 AM (µg/dl)	ND	4.70	5.0-25.0
Post ACTH Cortisol (µg/dl)	ND	21.75	> 20
Prolactin (ng/ml)	26.23	19.60	8.4-20.2



Figure 1. Preoperative MRI (Coronal section) showing pituitary macroadenoma occupying sellar and suprasellar region

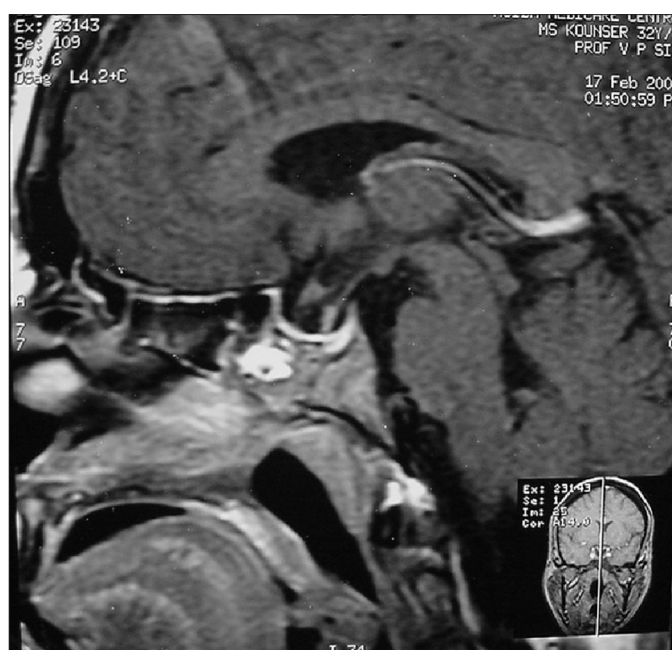


Figure 2. Postoperative MRI (sagittal section) showing empty sella with prominent pituitary stalk reaching the sellar base

pregnancy and high rate of caesarean section. Of the seven women, only one successfully breast fed, presumably due to of associated prolactin deficiency in these cases (5). A 23-year-old woman diagnosed as having traumatic panhypopituitarism on replacement was subjected to in vitro fertilization, resulting in successful outcome, indicating recent progress in assisted reproduction and its utility in the condition (6). Few cases of spontaneous pregnancy in panhypopituitarism in Sheehan's syndrome are reported in the literature (7-9).

Our case was documented to have gonadal, adrenal and thyroid failure following surgery for a pituitary macroadenoma. Presence of amenorrhea and a withdrawal bleeding with EP combination, but not with progesterone alone, also suggests that amenorrhea is of pituitary origin. Spontaneous conception while on EP replacement in these patients after pituitary surgery is a rare occurrence. In most of the cases reported, the central hypogonadism, either isolated or as a part of panhypopituitarism, has been managed by various regimens of gonadotrophins as ovulation induction; higher doses of gonadotrophins and a longer duration of therapy are required for stimulation of follicular growth in these patients (4). Pregnancy in patients with panhypopituitarism can occur spontaneously, possibly due to periodic release of small quantities of gonadotrophins from any residual pituitary tissue or a combination of EP could assist in follicular growth.

Pregnancies in women with panhypopituitarism are viewed as high risk. The experience about pregnancy outcome in panhypopituitarism has been reviewed. Five of the nine women delivered by caesarean section, four had vaginal deliveries, and seven were unable to breast feed (4). In our case, during the antenatal period, monitoring of thyroid functions and adjustments of the dosage of thyroxine was done to keep the FT4 levels in the high normal range and she needed 125-150 µg /day. The careful attention to management of glucocorticoid replacement is required to enhance maternal outcomes and avoid adrenal crisis during pregnancy. The degree of per-operative stress determines the dose and duration of therapy (3). During the 2nd and the third trimesters, our patient needed 7.5 to 10 mg of prednisolone daily in two

divided doses, while as during the per-operative period she was given 15 mg/kg infusion of hydrocortisone hemisuccinate. She continued to lactate for four months. Successful breastfeeding has been reported despite undetectable prolactin concentrations postpartum (3).

The present case history highlights that spontaneous pregnancy can occur in patients with hypopituitarism and pregnancy can be continued without progestational support. Proper management is required during pregnancy and delivery in these patients.

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