OPEN ACCESS Freely available online

Journal of Applied Pharmacy

Case Report

Effect of Progesterone on a Patient with Cervical Funnelling Post Cervical Encirclage

Sanjana V[1*], Manjula Deepak[2], Arul Amutha Elizabeth[1]

[1]*Department of Pharmacology, Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India;* [2]*Department of Pharmacology, Senior Conultant, Cloudnine Hospital. Chennai, Tamil Nadu, India*

ABSTRACT

This a case report of a patient with cervical funneling post cervical cerclage, describing the management and outcome. The patient had previous history of mid-term abortion due to cervical incompetence. During the present pregnancy, cervical cerclage was done prophylactically at 13th week. During the anomal scan (20th week), patient was diagnosed with funneling of the membrane until the level of the cervical stitch which was identified by a transvaginal sonography. The patient was treated with high dose progesterone (injectable progesterone and intra vaginal progesterone), patient advised complete bed rest with leg elevation. Patient successfully carried till term and delivered a healthy male baby weighing 3.52 kg.

Keywords: Cervical incompetence; Cervical encirclage; Progesterone; Term baby

INTRODUCTION

Cervical insufficiency is the inability of the cervix to retain fetus, in the absence of uterine contractions or Labor owing to a functional or structural defect. Cervical incompetence presents with painless cervical dilatation and expulsion of a live fetus preterm, cervical incompetence is a common cause for late second or early trimester fetal loss. There is either the prolapse or rupture of membranes and expulsion of live fetus despite minimal uterine activity. Cervical incompetence is due to either congenital or acquired causes.

Congenital causes include maldeveloped Mullerian ducts deficiency in collagen fibers leading to a weakened cervix which is unable to bear the weight of the developing fetus and typically results in spontaneous dilatation of the cervix around midterm of pregnancy.

The acquired causes include trauma during previous childbirth, cervical conization, LEEP (Loop Electrosurgical Excision Procedure), or forced cervical dilatation during the uterine evacuation in the first or second trimester of pregnancy.

Cervical cerclage is usually done prophylactically to prevent subsequent foetal loss in women with previous history of mid trimester abortion due to an incompetent cervix. Cervical cerclage is done commonly in women with twin pregnancies in order to prevent pre-term labor. Despite undergoing cervical cerclage, the incidence of preterm delivery in women with incompetent cervix is extremely high.

This is a case the patient has had a true cervical incompetence (anatomical incompetence). She presented with funneling up to the level of the stitch despite undergoing a prophylactic cerclage, and in spite of it being a singleton pregnancy [1,2].

CASE HISTORY

A 27 year old female with past history of mid trimester abortion (20 weeks), presented with positive UPT and was diagnosed to be 8 weeks pregnant. Cervical length assessed via trans vagial ultraonography revealed a cervix of length 2.9 cm. A prophylactic cervical cerclage (Mc Donald suture) was performed at 13th week, following which she was started on oral progesterone 200 mg. She was also diagnosed with gestational diabetes mellites for which she was treated with insulin. During her second trimester scan (at 20 weeks), a funneling was seen up to level of the stitch (Figure 1). She was advised complete bed rest with leg elevation (45 degrees) and limitation of daily activity

Correspondence to: Dr. Sanjana V, Department of Pharmacology, Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India; E-mail: sanjana.v@gmail.com

Received: 05-Jan-2022, Manuscript No. JAP-22-327; **Editor assigned:** 07-Jan-2022, PreQC No. JAP-22-327(PQ); **Reviewed:** 21-Jan-2022, QC No JAP-22-327; **Revised:** 24-Jan-2022, Manuscript No. JAP-22-327(R); **Published:** 31-Jan-2022, DOI:10.35248/1920-4159.22.14.327.

Citation: V Sanjana, Deepak M, Elizabeth AA (2022) Effect of Progesterone on a Patient with Cervical Funnelling Post Cervical Encirclage. J Appl Pharm. 14: 327.

Copyright: © 2022 V Sanjana, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

such as bathing and sitting erect. She was started on hydroxy progesterone 500 mg weekly intramuscularly and vaginal progesterone 400 mg OD. The number of hospital visits was restricted to once in 2 months. The patient was reviewed at the beginning of the 28th week, transvaginal sonography done during that visit revealed increase in funneling and a high PI. The dose of progesterone was then escalated to 400 mg BD due to increase in funneling. The patient was also started o aspirin 75 mg to increase the blood flow to the fetus. The patient was reviewed again at the beginning of 32nd week. The transvaginal sonography done revealed the same degree of funneling and showed a favourable decrease in the PI. The patient was reviewed again at the beginning of the 35th week and the USG done reavealed a fetal weight of 3500 gm ± 250 gm. The suture removal was planned at 36+1 day. The cervical suture was removed in the OP under sterile condition. The patient progressed to labour 2 days after the suture removal. She delivered a healthy male baby weighing 3.52 kg.

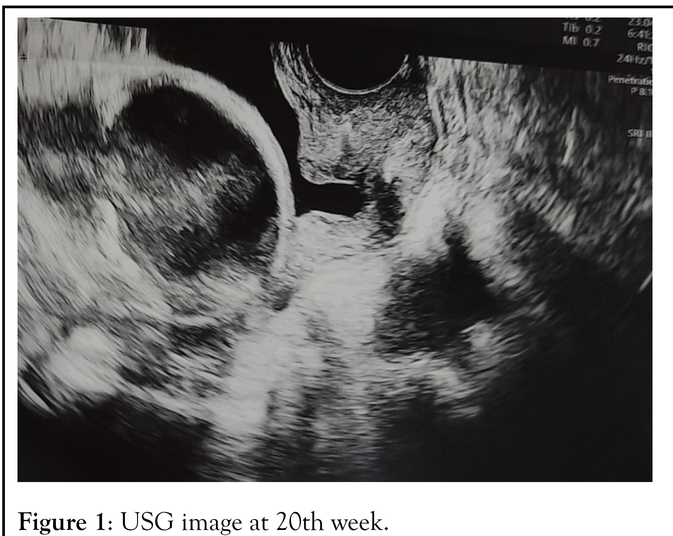

Figure 1: USG image at 20th week.

DISCUSSION

Examination

PV examination done in 12th week revealed short cervix. The first trimester scan revealed a cervical length of 2.9 cm. PV examination after cervical cerclage revealed intact stitch. The second trimester scan revealed funnelling of membrane up to level of stitch. PV examination confirmed Os closed. The second trimester scan revealed funnelling of membrane up to level of stitch. PV examination confirmed Os closed.

Diagnosis

The clinical findings and imaging was diagnostic of true cervical incompetence in our patient. She was advised complete bed rest, with leg elevation of 45 degrees. She was treated with hydroxy progesterone (proluton depot) 500 mg once weekly intra muscularly and progesterone (Susten SR) 400 mg twice a day intra vaginally [3,4]. She was also given insulin for gestational diabetes. High PI demanded the start of low dose aspirin to increase fetal blood flow.

Cervical insufficiency is a diagnosis based on obstetric history of second or early third trimester foetal loss with painless cervical dilation. The treatment of cervical incompetence is a multi-pronged approach which involves complete restriction of physical activity, high dose progesterone in the form of injectables and vaginal suppository. The treatment of cervical incompetence involves nonsurgical and surgical approach. The nonsurgical approach involves activity restriction, bedrest and placement of a vaginal pessary in some cases. The surgical approach involves three different types of cervical suturing-McDonald stitch, modified Shirodkar stitch and transabdominal stitch.

For this patient the McDonald suture was chosen. Progesterone is a key hormone for the maintenance of pregnancy, and a decline in progesterone action has been implicated in the control of cervical ripening and preterm labor.

The effect of vaginal progesterone in the prevention of preterm birth is thought to be related to a pharmacologic correction of the decline in progesterone action, which manifests itself clinically as a sonographic short cervix. Progesterone helps in keeping the uterus in a relaxed state [5-7].

Use of high dose progesterone was proved extremely beneficial in patient with cervical incompetence. The mother delivered a healthy male baby weighing 3.52 kg at 37 weeks.

CONCLUSION

If application software can be developed to a sufficient level of resolution, such an approach could have sufficient power take account of the large number of inter-dependent and changing variables that are characteristic of biological control systems, not only statically but also in modelled and actual real time. Such an approach could begin to illuminate an understanding of immune system control and guide the way to a more complete, and ultimately a more utilitarian, view of the role of immune systems in, for example, immunity itself, vaccine biology, some aspects of oncology, ageing and complex clinically important age-related neurological conditions such as delirium, dementia and Parkinson's disease. It might also have a predictive role in determining the risk of and outcomes of immune dysfunction patterns that are particularly related to ageing, such as chronically raised low-amplitude systemic inflammation, slowly resolving post-acute inflammation, reduced integrity of immune surveillance and the complete breakdown of inflammatory regulation that results in cytokine storm reactions. Only collaboration between clinicians, biologists, mathematicians and software engineers will take this issue forward. The opportunities for research in this domain are therefore exciting and extensive.

REFERENCES

1. Romero R, Yeo L, Miranda J, Hassan SS, Conde-Agudelo A, Chaiworapongsa T. A blueprint for the prevention of preterm birth: vaginal progesterone in women with a short cervix. J Perinat Med. 2013; 41(1):27-44.
2. Stupin JH, David M, Siedentopf JP, Dudenhausen JW. Emergency cerclage versus bed rest for amniotic sac prolapse before 27 gestational

weeks: a retrospective, comparative study of 161 women. Eur J Obstet Gynecol Reprod Biol. 2008;139(1): 32-37.

3. Zacharakis D, Daskalakis G, Papantoniou N, Theodora M, Mesogitis S, Vlachos G, Antsaklis A. Is treatment with cervical pessaries an option in pregnant women with a mid-trimester short cervix?. J Matern Fetal Neonatal Med. 2012;25:52.
4. Kiefer DG, Keeler SM, Rust OA, Wayock CP, Vintzileos AM, Hanna N. Is midtrimester short cervix a sign of intraamniotic inflammation? Am J Obstet Gynecol. 2009;200(1):374e1-374e5.
5. Lee SE, Romero R, Park CW, Jun JK, Yoon BH. The frequency and significance of intraamniotic inflammation in patients with cervical insufficiency. Am J Obstet Gynecol. 2008;198(6):633 e1-633e8.
6. Hagen B, Skjeldestad FE. The outcome of pregnancy after CO2 laser conisation of the cervix. J Obstet Gynaecol. 1993;100(8):717-720.
7. Ortoft G, Henriksen TB, Hansen ES, Petersen LK. After conisation of the cervix, the perinatal mortality as a result of preterm delivery increases in subsequent pregnancy. Int J Obstet Gynaecol. 2010;117(3): 258-267.