

Management of Maxillofacial Trauma in the Third Trimester of Pregnancy – A Case Report.

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Abstract

Pregnancy is a condition in which continuous physiologic changes are taking to accommodate the developing embryo. Management of trauma in a pregnant patient is always complex and involves effort of multispecialty departments. Facial fracture during this period is rare. Very few cases of condylar fractures are reported till date. Understanding the physiology is of prime importance for oral and maxillofacial surgeon to provide adequate treatment. This article describes the management guidelines for facial trauma in third trimester of pregnancy in a conservative approach.

Keywords: Condyle, Pregnancy, Trauma

Introduction

Management of maxillofacial trauma in pregnant patients is very challenging to the oral surgeons. The treatment mainly depends on severity of injury because such cases involve two lives. It is always better to postpone the surgical management of facial trauma if there is no life threatening emergency. It is recommended to treat conservatively and perform procedures with minimal stress under local anaesthesia preferably in second trimester of pregnancy. A high degree of clinical suspicion is essential for an early and prompt diagnosis, also

adequate pain control should be considered to achieve successful and healthy new born delivery. This article describes a rare case of bilateral sub condylar fracture in third trimester pregnancy which was managed conservatively with great efforts.

Case Report

A 22 year old female patient reported to the oral and maxillofacial outpatient department with a chief complaint of pain in the bilateral temporomandibular joint region and inability to open the mouth adequately since 2 days. History revealed that she had fallen on ground while walking resulting major blow to her chin. Symptoms started after fall and she also reported that she was pregnant; was in third trimester of pregnancy. Patient was examined by a local dentist and was advised for radiographic examination. (Orthopantomograph). Later patient was referred to higher centre for further management. On examination patient was moderately built, nourished and being oriented to time and place. On inspection extra oral examination revealed mild swelling of bilateral midface and inability to occlude teeth completely. Intraoral examination revealed mild bleeding in lower vestibular region with inflamed gingiva. Ellis

class 1 fracture with right central incisor. Occlusion was disturbed. (Fig 1).



Figure 1: Pregnant patient showing disturbed occlusion.

Inspectory findings are confirmed on palpation. Tenderness on palpation over chin and bilateral temporomandibular joint areas with reduced mouth opening about 24mm. No other significant facial deformity was noted. Orthopantomograph revealed bilateral sub condylar fractures (fig 2)



Figure 2: Orthopantomograph showing bilateral condylar fracture

No further radiological investigations were done. Before proceeding to manage facial trauma for which patient has visited to dentist; patient was referred to the department of obstetrics and gynaecology to rule out any effects of trauma on foetus and to know about foetal health. In this case patient gave history of fall and hitting to the floor, which has high chance of direct trauma to the belly. Gynaecologist's consultation revealed and confirmed healthy status of mother and foetus. Further treatment plan was done along with Gynaecologist's consultation. Obtained advice regarding patient's fitness for the further

surgical treatment. Maxillofacial planning was to reduce the fracture by closed reduction using MMF (MaxilloMandibular fixation) screws and rigid fixation using stainless steel wires. However, disadvantage of MMF in this case was about food consumption by mother as it would affect both mother and foetus. A special diet chart was established under the guidance of Gynaecology department for the next 28 days. The patient positioned in slight left lateral decubitus position to decrease uterine aortocaval compression pressure. After usual sterile preparation, lidocaine with epinephrine was infiltrated for local anaesthesia [2% lidocaine and 1:100000 epinephrine concentration] in the upper and lower vestibular region at the apex of canine and premolar. Stab incision was made using number 15 blade bilaterally in the upper and lower gingivobuccal sulcus at canine premolar region. 2 mm x 8 mm stainless steel MMF screws were internally fixed using 1.5 x 6 mm drill bit (Fig 3).



Figure 3: Post-operative picture after intermaxillary fixation. Closed reduction was achieved using rigid fixation. Patient was instructed to follow post-operative instructions and diet chart as per the guidelines given by the Gynaecologist and the Dietician. Patient recovered well from the procedure, and her two days hospital stay was uneventful. On discharge, the patient's progress was monitored by the department of oral and maxillofacial surgery and also by the Gynaecologist. After 28 days, the IMF screws were removed. Occlusion was stable. Periodic ultra-sonographic examination was done to know about

health status of foetus which was normal. An ideal occlusion was established and mother underwent C-section at 9 months 4 days with both mother and baby being healthy.

Diet Plan

Food Timings: 6 AM, 8AM, 10AM, 12 NOON, 2PM, 4 PM, 6PM, 8PM, 10PM.

Liquids:

1	Water	2 Liters
2	Fresh Fruit Juice – Any	
3	Tender Coconut Water	Twice Daily
4	Diluted Curd/Butter Milk	
5	Milk With B Protein Powder	Two Scoops In One Glass
6	Milk With Sugar	
7	Milk With Argipreg Powder	Two Scoops In One Glass
8	Milk With Cashew Nut And Almond Powder With Sugar	Two Scoops In One Glass

Semisolids

1	Ragi Malt	
2	Suji Malt	
3	Oats	
4	Payasam	
5	Mashed Vegetables With Dal With Soft Cooked Rice	

Drugs

1	Syrup Dexorange	2 Tsp Twice Daily
2	Syrup Calcimax	2 Tsp Twice Daily
3	Syrup A To Z	2 Tsp Twice Daily
4	Ors-L	

Discussion

Traumatic injuries are prevalent in 6% to 7% of pregnant women and are among the most common causes of non-obstetric maternal risk factors for spontaneous abortion, preterm labour, premature delivery and mortality.^{1, 2, 3, 4}If the traumatic injury involves a pregnant woman who is in her 1st trimester, it is possible that she is not aware of her pregnancy; therefore, human chorionic gonadotropin test should be performed. This preliminary laboratory test is recommended for all injured women in childbearing

age. In cases when traumatic injury occurs during the 2nd or 3rd trimester of pregnancy it is necessary to use ultrasound to verify the age, size, and viability of the foetus. Foetal heart rate should also be regularly monitored to specify how advanced pregnancy is and if the foetus would be viable if delivered.^{1, 2, 3, 4}Treatment options of fractures during pregnancy are very limited. Drugs should be used with caution and only in cases of severe pain because of the effects on the foetus according to the stage of the pregnancy. Also, the risk of preeclampsia should be considered to achieve a successful birth delivery. The most common analgesic that can be safely used in all trimesters of pregnancy is oral paracetamol.⁶In the second and third trimesters, maternal positional changes may affect the cardiac output. When the patient is placed in the supine position, the gravid uterus can cause compression of inferior vena cava thus reduces the venous return to the heart. Hence, the decreased preload will result in the sudden decrease in the cardiac output (10%–30%). At this stage, the patient can have symptomatic maternal tachycardia and hypotension, dizziness, and sweating. The patient can have symptoms of presyncope. This may result foetal compromise due to reduced perfusion to uterus.⁷ Hence it is recommended always to position the pregnant patient in left lateral position to avoid compression of inferior vena cava. The approach to surgery is different in pregnancy than in the nonpregnant state. A central focus is balancing the health and well-being of the foetus against the mother's need for surgery. A significant proportion of foetal neurodevelopment occurs in the third trimester. Insult through the primary disease process, surgical complications, anaesthetic agents, or anaesthetic management (e.g. respiratory support) has the potential to affect neonatal and childhood neurodevelopment. Animal models have been used to investigate whether anaesthetic

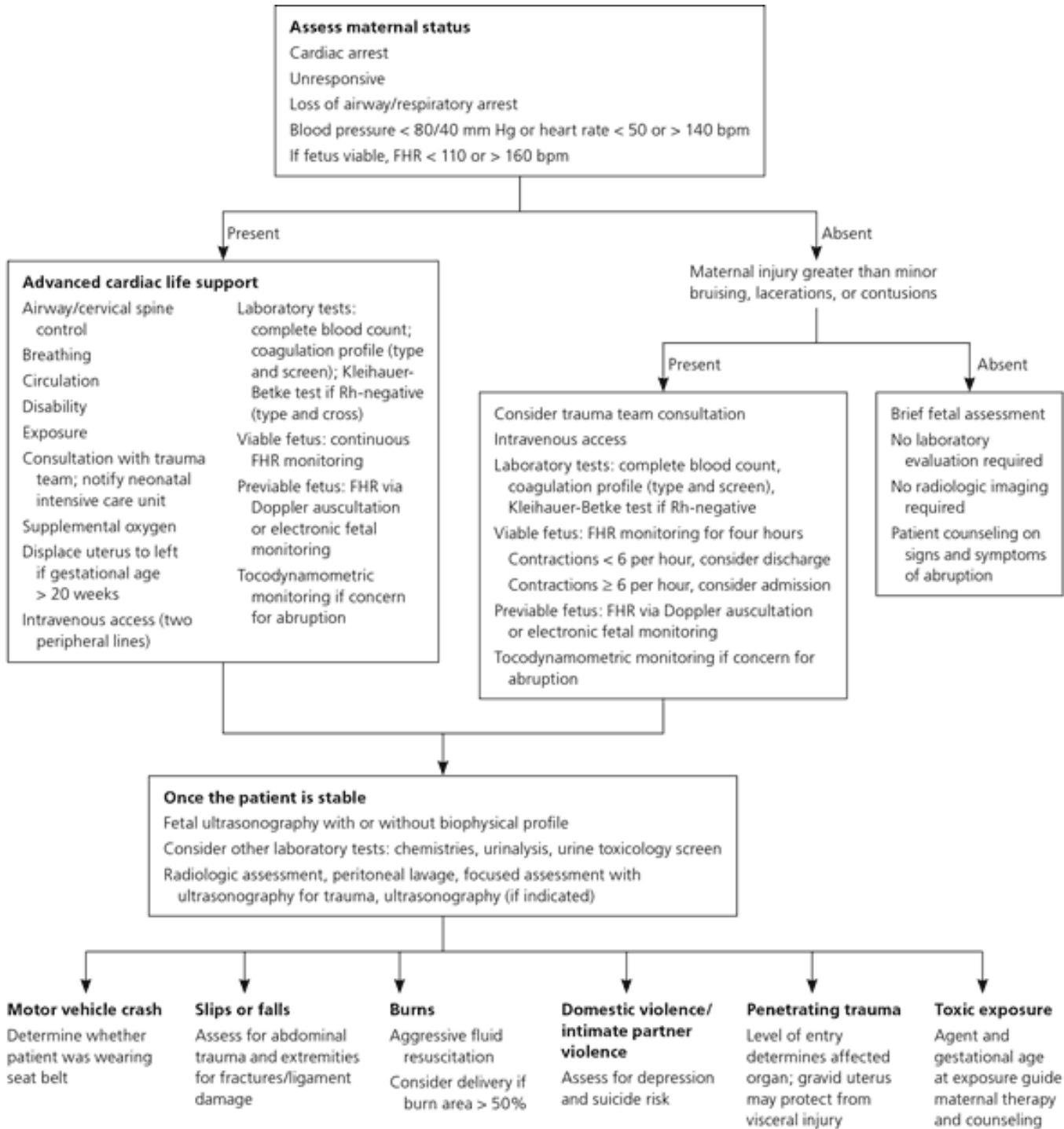
agents can cause neurodevelopment handicap. Exposure to local anaesthetic or inhalation anaesthetics has been associated with neurodevelopment deficits in rodents.⁸ hence careful administration of local anaesthetic dosage is

mandatory during surgery in the third trimester of pregnancy.

Management

Following flow chart provides an algorithmic approach to the management of trauma during pregnancy.⁵

Management of Trauma in Pregnancy



Summary

It is important to remember that management in case of trauma in pregnancy, treatment is being rendered to two patients: mother and foetus. Careful examination with prior consultation of patient's Gynaecologist specialist is mandatory. All the treatment (unless emergency) should be postponed in all women of child bearing age for whom a negative pregnancy test has not been ensured.

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