



Nasogastric Tube Placement Errors and Complications in Pediatric Intensive Care Unit: A Case Report

Mahin Seyedhejazi*, Masoud Hamidi, Daryoush Sheikhzadeh, Behzad Aliakbari Sharabiani

Tabriz Children Hospital, Tabriz University of Medical Sciences, Tabriz, Iran

ARTICLE INFO

Article Type:
Case Report

Article History:

Received: 1 Nov 2011
Accepted: 14 Dec 2011
ePublished: 20 Dec 2011

Keywords:

Nasogastric Tubes
Children
Nasal Ala Pressure Sore

ABSTRACT

Nasal ala pressure sores are among complications of nasogastric tube in Pediatric Intensive Care Unit (PICU). The severity of the injury is usually minor and easily ignored. However, the complication could be easily avoided. This is a case of nasal ala sore after the placement of nasal enteral tube in a pediatric intensive care unit in our center. A 5-month-old female with pulmonary hypertension secondary to bronchiectasis with nasal ala pressure sore were reported. She was hospitalized in pediatric intensive care unit at Tabriz Children Hospital in 2010. After 53 days of PICU hospitalization she had nasal ala sore. Conclusion: We know that nasal ala pressure sores could easily be avoided when preventive procedures were performed during nasogastric tube insertion.

Introduction

Children require feeding tubes for different reasons but children who are not able to eat normally by mouth, may use feeding tubes to make it possible to provide necessary calories and nutrients for them. There are different types of enteral feeding tubes including nasogastric, gastrostomy and jejunostomy tubes. Gastrostomy or jejunostomy tubes are surgically located by opening an incision in the abdomen and protecting the tube straightly into the stomach or the jejunum. The other end of the tube is placed outside of the body and is accessible for feedings. These types of tubes are applied in condition where long-term enteral feedings may be essential (long-term PICU hospitalization).

A less-invasive nasogastric tube is useful for short term tube feeding in children. Nasogastric tubes are frequently used in the pediatric intensive care unit (PICU) for both nutrition and delivery of medications and decompression of gastric contents. A nasogastric tube is inserted through the nose, passes down the esophagus, and ends in the stomach. These tubes are secured by various methods to the face and are planned for short-term use. Placing a nasogastric tube is a frequent and relatively simple and protected process that can obtain a huge advantage to the patient. However, placing a nasogastric tube is not without risk. These risks include aspiration, gastrointestinal complications, metabolic complications and mechanical complications. One of the complications may be due to displaced feeding tubes. Therefore, it is

safe to use the nasogastric tube with adequate fixation and care. Nasal ala pressure sores have been reported occasionally with the use of nasogastric tube. In most of cases, the complication is so minor that it is easily ignored. However, the problems of injury do exist and are worthy of discussion.¹

Case Report

A 5-month-old female with pulmonary hypertension secondary to bronchiectasis with nasal ala pressure sore were reported. She was hospitalized in pediatric intensive care unit at Tabriz Children Hospital in 2010. After 53 days of PICU hospitalization she had nasal ala sore. Mild scar formation over the nasal ala region was noted (Figure 1).

Discussion

Hematoma, mucosal laceration, and mucosal granuloma have been occasionally observed following nasogastric tube insertion for long time.² The nasal ala pressure sores are rarely reported. The pressure sores are usually minor and easily ignored. We reviewed the etiologies and methods of prevention of this complication.

The pressure ischemia theory holds that a constant pressure exceeds 32 mmHg on soft tissue for a period may result in pressure sores.³ In addition, it was concluded that a small amount of pressure maintained for a long period might induce more tissue damage than a large amount of pressures for a short period.⁴ Complications

*Corresponding author: Mahin Seyedhejazi (MD), Tel.: +989141150981, E-mail: seidhejazie@yahoo.com

of nasogastric tube may require a replacement of the tube from another orifice or oral insertion of NGT frequently to prevent complications of pressure sores to one nasal ala.

Another way to prevent this complication is the application of soft and flexible lubricated nasogastric tube or replacement of the NGT with gastrostomy or jejunostomy tubes that are surgically inserted through the outside of the abdomen into the stomach or small intestines. These types of tubes are applied in positions where long-term enteral feedings may be essential.

It seems that changing position of NGT and using softening pomade around the tube fixation is effective for prevention of sore type complication.



Figure 1. A Female with nasal ala pressure sore

Conclusion

Nasal ala pressure sores are usually not associated with significant morbidity and mortality. The subsequent complications are not fatal. However, the possibility of its occurrence is constantly ignored in the PICU that may lead to legal and ethical problems. It is easily avoided if proper education of the PICU team including PICU nurses and the number of pressure sores on the nasal ala could be reduced by changing place and fixation point of nasogastric tube so no nasal ala pressure sores have been observed. It is essential for pediatricians and anesthetists to be aware of this complication when a patient needs long term NGT feeding especially in PICU.

Ethical issues: The ethics committee of Tabriz University of Medical Sciences approved the study.

Conflict of interests: No conflict of interest to be declared.

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