

Proximal Clamping of Umbilical Cord and Prevention of Umbilical Granuloma (Preliminary Results)

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ABSTRACT. Umbilical granuloma is a common pediatric problem related to persistent infection at the umbilical cord stump in the neonatal period. In the present study, the authors looked at the relation between a new way of proximal clamping of the umbilical cord and the incidence of umbilical granuloma in comparison with the conventional clamping.

Keywords: Umbilical cord, Proximal clamping, Prevention, and Granuloma

Introduction

Umbilical granuloma is a common pediatric problem that occurs due to infection at the umbilical cord leading to formation of heaped cherry red granulations as pyogenic granuloma accompanied by seropurulent discharge, which needs cauterization by silver nitrate or excision and cauterization of the stump for the large granulomas^[1, 2]. Other modality such as cryotherapy has been reported for the management of umbilical granuloma^[3, 4].

The aim of this study was to examine the incidence of occurrence of the umbilical granuloma in relation to the way of umbilical cord clamping immediately after birth.

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Accepted for publication: 05 January 2003. Received: 06 October 2002.

Patients and Method

The study was done at King Abdulaziz University Hospital (KAUH) in Jeddah over a six-month period. It included 1,000 normal neonates. They were divided into two groups:

The first group was formed of 500 consecutive normal neonates with clamping of umbilical cord at 2 to 3 cms from the umbilicus (conventional method).

The second group was formed of 500 consecutive normal neonates with a new method of proximal clamping of umbilical cord at the base of umbilical cord flushed with umbilicus, (no umbilical cord remnant).

Patients of both groups were followed-up to the age of 6 weeks in the outpatient clinic to check the time of umbilical cord fall-off, the presence of umbilical discharge, and umbilical granuloma.

Patients who had small umbilical granuloma were treated by silver nitrate cauterization. The larger granulomas were crushed by artery forceps and excised, then the remaining stump was cauterized with silver nitrate. This debulking of the granuloma would limit the number of cauterization sessions with silver nitrate for complete ablation of the granuloma.

Results

Patients of both groups were seen during the six week follow-up in the outpatient clinic, both groups were seen.

In the first group (conventional method), the average time for drying and fall-off of the umbilical cord was 7 days with a range of 3-15 days. The incidence of umbilical granuloma was 8% (40 patients), half of them (20 patients) gave a history of seropurulent discharge. All of them needed one application of silver nitrate for complete ablation.

The second group (proximal clamping) there was no record of umbilical cord fall-off as there was no Wharton's jelly left after removal of the clamp. There was no umbilical granuloma observed in this group.

Discussion

It is surprising that there is no change in the care of umbilical cord by reviewing the English literature, there has not been any other paper reporting this aspect of proximal clamping in prevention of umbilical granuloma. It is a common paediatric problem that needs simple treatment with local cauterization with silver nitrate. This chemical cauterization has been reported to cause periumbilical cutaneous burns^[5, 6]. This com-

plication of silver nitrate burn can be avoided by precise application to the umbilical granuloma as in our experience with 40 patients who had the treatment of their umbilical granuloma.

In spite of the other reported modalities of treatment of umbilical granuloma such as cryotherapy^[3,4], we believe that the cauterization with silver nitrate is the simplest, easiest, and cheapest modality, provided it is applied properly and bulky granuloma crushed and excised before the application of the silver nitrate.

It is important to realize that the presence of granuloma is an indication of local infection of umbilical stump, which might lead to serious generalized sepsis in the neonate of local spreading infection of the anterior abdominal wall or the formation of local discharging sinus^[2].

The prevention of umbilical infection is very important to reduce the risk of neonatal sepsis particularly in the high risk neonate.

The conventional clamping has the advantage of the easy access of umbilical cannulation, this advantage has to be considered in neonate expected to require umbilical cannulation for exchange or other intravenous infusion, then we can avoid the proximal clamping; but even it is applied it is very easy to perform umbilical cutdown to have umbilical vascular access.

We believe that the new method of proximal clamping with 24 hours removal of the clamp would minimize the care required by the mothers till the time for the umbilical cord to fall off as there will be no umbilical remnant, this in turn will reduce the incidence of local infection, discharge and granuloma formation which require medical treatment^[7].

It is important to realize the difference between umbilical granuloma and other umbilical problems such as umbilical polyp or remnant of vitellointestinal duct as the treatment is different^[9]. We didn't have any problem related to vitellointestinal duct in all of our patients.

Conclusion

Proximal clamping of umbilical cord for 24 hours is very simple effective way of cord clamping that will reduce the incidence of local umbilical infection and consequently it will prevent the development of umbilical granuloma.

In practice it will minimize the needed local care for the umbilical cord remnant by the mother, and they are more comfortable with this technique as they don't need to give much care to the umbilical stump.

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ربط الجزء الداني من الحبل السُّري ومنع حدوث الورم الحبيبي

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