

**APPLIED AND AYURVEDIC APPROACH TO UMBILICAL CORD CARE**

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**ABSTRACT**

Umbilical cord care is described by both *ayurvedic* and modern texts in details. In ancient *Ayurvedic* texts, *acharyas* have given prime importance to care of newborn. This conceptual study collected from *ayurvedic samhitas* and modern neonatology. Various procedures were advised in the management of umbilical cord by acharya as with a few differences in sequences of these procedures. *Charaka*, *Sushruta* and *Vagbhata Acharyas* have described the care of umbilical cord in their own measure and *pharmacodynamics properties* of the drugs. Similarly the modern also describes care of umbilical cord in the discipline of Neonatology along with the prevention of infections, both having common aim to protecting newborn and avoid sepsis.

**Keywords:** umbilical cord, *ayurvedic samhitas*, modern neonatology, infections.

**INTRODUCTION**

India has the dubious distinction of having highest number of annual neonatal birth & deaths among all the countries in the world.<sup>1</sup>

A newborn is prone to get infection due to multiple causes. So proper and adequate newborn care plays an important role to avoid those and in the long run reduce the neonatal mortality rates, because it has been observed the most of the neonatal death occurs due to sepsis.<sup>2</sup>

Umbilical cord usually dries and separates within 6 – 8 days. After birth, although, aseptic delivery and routine cord care decrease the risk of umbilical infection, the necrotic tissue of the umbilical cord is an excellent medium for bacterial growth. If proper and adequate asepsis is not practiced, it may result in local sepsis, septicemia or necrotizing fasciitis which have high mortality rate.<sup>2</sup>

Thus to avoid these complications it is advised to take appropriate care of

umbilical cord till it separates. Care of the umbilical cord is one of the optimal care at birth and also prevention of bacterial infection.<sup>3</sup>

**AIMS AND OBJECTIVES**

To study of umbilical cord and its care in detail according to *ayurveda* and modern neonatology

To study antiseptic/antimicrobial activity of *ayurvedic* drugs

**MATERIALS**

1. Charak samhita, Sushrut samhita, As-tang sangraha and other samhitas
2. Modern pediatrics books, Internet collection and articles on umbilical cord care.

**METHODS**

1. A fundamental collective study on care of umbilical cord from *ayurvedic samhitas* and modern neonatology.
2. Details about umbilical cord and its care as per modern concept and *nala chedana* as per *ayurvedic* concept.

## Umbilical Cord

### Anatomical Occlusion

In placental mammals, the umbilical cord is a conduit between the developing embryo or fetus and the placenta.<sup>4</sup>

During perinatal development the umbilical cord is physiologically and genetically part of fetus. In human normally contains two arteries and one vein buried within Wharton's jelly.<sup>5</sup>

### Physiological Postnatal Occlusion

In absence of external interventions, the umbilical cord occludes physiologically shortly after birth, explained both of Swelling and collapse of Wharton's jelly in response to reduction in temperature and by vasoconstriction of blood vessels by smooth muscle contraction.<sup>6</sup>

### Care of the umbilical Stump

#### 1. Separation of Cord

The sterile instruments must be used to cut and clamp the cord for prevention of occurrence of tetanus neonatorum.<sup>1</sup>

Now days the umbilical cord is clamped without delayed after delivery. The first ligature is tied about 2-3 cm from the abdomen of the baby and second ligature is tied 5 cm from the abdomen. The cord is cut by use of new sterilized razor blade in between these two ligatures.<sup>2</sup> Bleeding commonly occurs after 2 to 4 hours of birth due to shrinkage of cord and loosening of ligature. So cord must be inspected after birth. Ligation of cord with a rubber band or disposable clip safeguards against this hazard.<sup>1</sup>

#### 2. Local Applications

Triple dye, ethyl alcohol, betadine or chlorhexidine should be applied at the tip and around the base of the umbilical stump daily to prevent colonization.<sup>1</sup>

To reduce colonization with staphylococcus aureus and other pathogenic bacteria, the umbilical cord may be

treated daily with bactericidal or antimicrobial agents such as triple dye or bacitracin.<sup>3</sup>

Alternatively, chlorhexidine washing or on rare occasion during staphylococcus aureus epidemics, a single hexachlorophene both may be used.<sup>3</sup>

### 3. Precautions

The dressing should not be applied. To keep the stump bacteria free by using polybactericidal powder containing neomycin, bacitracin and polymyxin.<sup>1</sup>

The delayed falling of the cord is also a useful marker of immunodeficiency state. The cord takes longer time for falls, if it is dry and shriveled or when infected.<sup>1</sup>

Topical ointments should not be applied to preterm infants because this treatment increases the risk of bacterial sepsis.<sup>3</sup>

### Ayurvedic Concept

#### 1. According to Acharya Sushrut

"----- Tato Nabhinadimstangulmayamya sutren badhva chedayet, Tatsutrekdesham ch kumarasya grivayam samyag badhniyat || 14|| Su.sha. 10/14

After the child is born, the *nabhinadi* (umbilical Cord) should be pulled to the length of *eight angula* (16cm) tied with a thread and cut and one end. (Portion of the umbilical cord) Should be tied round the neck of the child, loosely (to prevent pain, hindrance and exudation).<sup>8</sup>

#### 2. According to Acharya Charak

"Tataha kalpanam nadyaha|Atstasya kalpanavidhimupdeshamah Nabhibandhanat prabhutyastangulmbhidnyanam, krutva chednavkashasya dvayorantrayoha shanergruhitva tikshnena rauukmarajtaysanam chednanamnyatmenardhdharen chedyet tamagre sutrenopanibdhya kanthesya shithilamvasrujat Tasya chetrabhihi pachyet,tam lodhramadhukpriyangu sudaruha-

ridrakalkasidhen tailenabhanyat,eshamev  
tailoshadhanam churnenavchur-  
nayet|Eti nadikalpanvidhiruktaha sa-  
myak||Cha.Sha 8/44

### Separation of Umbilical Cord

Acharya Charaka described *nala chedana* to be undertaken after *pranapratyagaman*. After fixing the point at eight fingers from umbilical attachment the cutting point should be held tightly on both sides and cut with a sharp half-edged instrument made of gold, silver or steel. The end of the attached portion should be tied with thread and attached loosely to the neck of the fetus. If the cut portion suppurates, it should be massaged with the oil prepared with the paste of *lodhra* (*Symplocos recemosa*), *Madhuka* (*Glycyrrhiza glabra*), *Priyangu* (*Callicarpa macrophylla*), *Devdaru* (*Cedrus deodara*), and *Haridra* (*Curcuma longa*). The powder of the above drugs may also be applied over the part. Thus the processing of the cord is described well.<sup>7</sup>

### Local Application

*Madhuk*, *Lodhra* and *Priyangu*: *Raktastambhak* (Haemostatics), *Kaphaghna* being *kashaya rasa* (astringent action). It stops bleeding due to *kashaya rasa* by contracting capillaries.<sup>10</sup>

*Devdaru*: It eliminates secretions from infection due to its *tikta* (bitter), *ushna* and *laghu* *gunas*. It also eliminates foetid smell by acting as antiseptic.<sup>10</sup>

*Haridra*: *Vranapachana*, *Shodhana* (Purification) and *Ropana* (wound healing). Its paste should be applied as it is *shothahara* (anti inflammatory) and *Vednasthapana* (anodynes).<sup>10</sup>

### 3. According to Acharya Vagbhatta

“Pratyagat pranasya ch prakrutibhutasya nabhinalam nabhibandhnachaturangulam syordhva shomsutren badhva tikshnen shastren vardhyet|Grevayam chainma-

sajayet|Nabhich kushtatailen sichyet ||  
A.S.U. 1/5

After the child has regained its life (breathing well) and became normal, its umbilical cord should be tied with thread of flax (hemp) about *four angulas* (Finger's breadth) above the umbilicus, then with the sharp knife the cord should be cut (must above the knot) and hung around the neck.

The (Stump of) the cord should be anointed with oil processed with *kustha* (*Sassurea lappa*).<sup>9</sup>

### Local Application

*Kustha*: *Vednasthapana* (anodynes) and *shothahara* (wound healing). It eliminates foetid smell being *teekshana* and *sugandhi*. Hence, used for fumigation from infection being *Jantughana* (antimicrobial). It also eliminates vitiated discharges by its *ushna* and *teekshana* *gunas*.<sup>10</sup>

Essential oil has carminative and strong antiseptic and disinfected properties especially against the streptococcus and staphylococcus etc.<sup>11</sup>

### DISCUSSION

Various profounders of *Ayurveda* have described the care of umbilical cord in their own measure yet its essence is the same and moreover in its intent heralds the modern day Neonatology.

Acharya Charaka described the procedure of *nala chedana* and local applications of ayurvedic drugs. He also explained various complications owing to faulty technique of *nala chedana*.

Acharya Sushruta has also mentioned *nala chedana* in *navajat shishu paricharya*. Acharya Vagbhatta mentions similar technique of *nala chedana* with few differences of these procedures. He also described the use of *Kushta taila* for the prevention of *paka* (Inflammation).

The modern sciences also described the care of umbilical cord along with precautions and local applications to avoid sepsis.

## CONCLUSION

Although, since then a rapid progression in Neonatology owing to technological advances in biological sciences have taken place yet the *Ayurvedic acharyas* have to be credited for keeping in place a very rational newborn care regimen.

The in detail care of umbilical cord is surely the precursor of recent neonatology both having the common aim of protecting the newborn and adapting it to the worldly environment.

In order to reduced neonatal infections and sepsis, essential and basic care of the umbilical cord should be available at all health care levels because they are not expensive.

The provision of essential newborn care is the most urgent key health priority in our country.

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