SUNTEXT REVIEWS

SunText Review of Case Reports & Images
ISSN: 2766-4589

Open Access
Editorial Article
Volume 1:2

Umbilicus Is a Strategic Area of Newborn Body

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Received date: 11 September 2020; **Accepted date:** 13 September 2020; **Published date:** 17 September 2020

Citation: Hegazy AA (2020). Umbilicus Is a Strategic Area of Newborn Body. SunText Rev Case Rep Image 1(2): 108.

DOI: https://doi.org/10.51737/2766-4589.2020.008

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Vital signs of newborns are essential to be assessed immediately after birth. These include heart rate, breathing and temperature [1]. Following initial assessment, a complete investigation of the baby from head to toes should be done including the colour of skin and eye conjunctiva and body weight. Such investigation might focus on particular regions such as head circumference and morphology [2]. Careful examination of genitalia is also suggested to avoid confusions in ambiguous cases. Thereafter, the region of umbilicus might take a special attention.

Umbilicus commonly called navel is a permanent depressed scar in the anterior abdominal wall, marking the end of intrauterine life and beginning of another long postnatal one. Its site represents the inlet for all necessities of prenatal life of humans through the umbilical cord that connects the fetus with its root at placenta anchoring it to maternal uterine wall. It acts for the fetus like a neck of bottle. Therefore, it is considered as a mirror for abdomen particularly in newborns. Its careful investigation in the early days following birth is essential to exclude many congenital anomalies and for their proper management if present [3].

Formation of umbilicus begins by the end of the third week of intrauterine life with folding of the embryonic disc to adopt the final cylindrical shape where folding mainly at four aspects namely cranial, caudal and two laterals meet together. Embryonic folding incorporates a part of yolk sac within body of the embryo forming the gut and another small part outside the body called definitive yolk sac that disappears. The two parts are connected by vitelline duct that obliterates and disappears; its congenital persistence results in clinical manifestations. This includes vitelline fistula resulting from total failure of obliteration of vitelline duct that might be manifested at the umbilicus by passage of fecal matter. Persistence of the duct proximally results in formation of Meckel's diverticulum projecting from the terminal part of ileum. Inflammation of this diverticulum being near to appendix in location might lead to mimicking appendicitis. On the other hand, failure of obliteration of vitelline duct at its distal end could lead to vitelline sinus that might pour mucous at umbilicus [3,4].

Moreover, the intra-abdominal parts of umbilical vessels obliterate forming ligaments; ligamentum teres connecting umbilicus with liver and two lateral umbilical ligaments connecting it with urinary bladder. Meanwhile, the bladder apex is connected to umbilicus with obliterated urachus that forms the median umbilical ligament. Failure of obliteration of urachus or umbilical vessels might be represented by discharge of urine or blood at umbilicus, respectively [4].

Umbilicus is also a site for congenital herniation called omphalocele due to failure of reduction of the physiological umbilical hernia during intrauterine life. Reduction of such herniation commonly occurs by age in the childhood; and should be differentiated from other case of deficient abdominal wall called gastroschisis at the region of umbilicus that needs urgent surgical interference [3].

Therefore, umbilicus is one of the strategic regions in newborns' body to be checked following the vital signs. This might lead to proper management of the abnormal conditions and anomalies that could be encountered at umbilicus.

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