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A REVIEW OF LAKSHANADHYAYA OF KASHYAPA SAMHITA WITH SPECIAL REFERENCE TO PAEDIATRIC EXAMINATION

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ABSTRACT

The *Lakshanadhyaya* is a crucial chapter within the *Kashyapa Samhita*, a classical Ayurvedic text primarily focusing on paediatrics (*Kaumarabhritya*). This chapter is dedicated to the diagnosis and prognostication of health in fetuses and newborns based on observable signs and symptoms (*Lakshanas*). The text offers a comprehensive guide to understanding early indicators of health and disease, which are fundamental in the traditional Ayurvedic approach to paediatric care. **Objective:-** The primary objective of the *Lakshanadhyaya* is to provide a detailed account of the signs that can be observed in newborns and fetuses to assess their health status. It aims to guide practitioners in early diagnosis, prognostication, and the application of preventive and therapeutic measures to ensure the well-being of the child. **Data Source:-** *Lakshanadhyaya* of *Kashyapa Samhita* published by Chaukamba Sanskrit Sanstan, Varanasi. **Material and Method:-** Relevant materials were searched from sources such as published books, journals, and the Internet. A critical review was done over the same. **Discussion:-** *Acharya Kashyapa* has predicted the quality and quantity of life by assessment of anatomical and physiological features of the child from birth till adolescence. All clinical points such as signs of gestational maturity (by examining the skin, hair, movement, and genitals), anthropometry (Size of body parts), secondary sex characters (Such as pubic hair, breast, and

genitals), and systemic examinations (such as per vaginal, per rectal, musculoskeletal, and per abdomen examinations) are covered in *Lakshanadhyaya*. **Conclusion:-** This article highlights that time to time examination of a child helps to predict their future life. The abdomen, vagina, nail, scrotum, penis, hair, joints, buck, gain, etc., are important areas of examination for early detection of impending clinical manifestation.

KEYWORDS: Future prediction, *Kashyapa Samhita Lakshanadhaya*, Paediatric examination.

INTRODUCTION

Kashyapa Samhita has given importance to paediatric anatomy, physiology, ailment, and its management. Currently, Sutra Sthana is not available as a whole and chapter number 28 *Lakshanadhyaya* is also incomplete at the end. As per initial *Shloka*, the whole chapter is based on five questions asked by *Vruddha Jivaka* to *Bhagavan Kashyapa*. The main and first question was "With what features the children are of long life in line with this question, *Acharya Kashyapa* has given an extensive description of the feature of different parts of the body and its relation with upcoming life. Clinical points such as signs of maturity (by examining the skin, hair, movement, and genitals), secondary sex characters (such as pubic hair and genitals), anthropometry (size of body parts), and systemic examinations (such as per vaginal, per rectal, musculoskeletal, and per abdomen examinations) are covered in this chapter along with its future prediction.

In summary, the *Lakshanadhyaya* of the *Kashyapa Samhita* serves as a critical guide in Ayurvedic paediatrics, offering timeless insights into fetal development, maternal health, and early childhood care. Its teachings continue to influence Ayurvedic practice, emphasizing the profound connection between the health of the mother and the child, and the importance of early diagnosis and holistic care.

MATERIALS AND METHODS

Lakshanadhyaya of *Kashyapa Samhita* published by Chaukhambha Samskara Sansthan, Varanasi, edition reprint 2009 (ISBN 81-86937-67-6) was kept in center for this review. Relevant materials were searched and collected from other Samhita, published books, journals, and Internet web searches. Remarks and comments on individual features have been mentioned in the tabular form [Tables 1-13]. Probable justification of *Kashyapokta* future prediction is given in the tables in column number 3, after reviewing the above said

literatures. However, there are certain areas where authors could not make connections and accept limitation of the review study.

DISCUSSION

The aim of Ayurveda is to attain a longer and healthy life span. The main tool to assess overall health status and intern life span is physical examination. The importance of examination increases by many folds in paediatric patients, as baby cannot complain their pain and discomfort and hence history taking could not help for reaching the diagnosis.[1] By time to time examination, one may detect latent congenital deformity, early signs of illness and able to assess the status of growth and development, which may help in timely management. Hence, almost every ancient treatise has given importance to examination and postulated number of assessment criteria. *Acharya Kashyapa* has elaborated clinical examination starting from newborn to adolescence along with future prediction in a chapter of *Sutrasthana*, namely *Lakshanadhyaya*, in which examination starts from the foot to the hair of the scalp.

Acharya Kashyapa has elaborated physical examination along with future prediction in *Lakshanadhyaya* starting from newborns till adolescents. This article is an attempt to equip the physician with a foresight to suspect and diagnose the unapparent systemic associations through detailed examination. This simple examination is cost-effective and requires minimal time for both the clinician and the patient.

Detailed examination of nails is precisely given in *Lakshanadhyaya*, as nails are in contact with the periosteum of the phalangeal bone and hence good indicators of metabolic changes occurring in the body. Therefore, the physiological and pathological processes of blood and bone might influence the nail mineral content and hence provide an important clue for early diagnosis.

As mentioned in Table 1, *Acharya Kashyapa* has given the detailed physical features of the nail along with future prediction and probable clinical importance of thickened nails in newborns and children can be indicative of Congenital Pachyonychia (Pachyonychia Congenita), Ichthyosis, Nail-Patella Syndrome, Fungal Infections (Onychomycosis), Trauma, Congenital Mal-alignment of the Big Toe nail. Striped nail indicative of physiological ridges, nutritional deficiencies such as iron, zinc, or biotin, can lead to ridged nails. Malnutrition or specific vitamin deficiencies can cause subtle changes in nail growth, including the

appearance of ridges. Dry Nails indicative of deficiencies in essential nutrients, such as biotin, iron, zinc, and vitamins A, C, and E, can lead to dry, brittle nails, Eczema (Atopic Dermatitis), Hypothyroidism, Vitamin B7 (Biotin)[2] and Calcium deficiency. Discolored nails are result of infections with fungi, most common is *Trichophytum rubrum*, Pseudomonas bacteria infect the g bed and cause chloronychia (greenish-colored nails), Red or black nails may result from a hematoma under the nail as a result of trauma. Depressed like oyster or husk nails become concave hollow and saucer-shaped (koilonychia) in iron-deficiency anaemia, CHD, autoimmune disorders (SLE), and sometimes in rheumatic fever and liver diseases. Beau's line can be seen in malnourishment, measles, mumps, zinc deficiency, and kidney disease. Thick, white, irregular white and rounded indicative of anaemia. A white nail with a rim of darker color at the tip is called Terry's nail and often a sign of severe liver disease. Nails that are half white and half dark are called Lindsay's nails and often associated with kidney disease.[3]

Physical features of soles and feet can be updated with newer examination tools such as the Foot Posture Index,[4] Arch Height Index[5] and Talar Tilt Physical Examination.[6] The heel bisector line should also be assessed to evaluate for foot deformities such as metatarsus adductus, a cause of intoeing. Method of assessment of the heel bisector line is with the subject prone and knees flexed at 90°, consider an imaginary straight line from the heel to the forefoot. Normally, the line that bisects the heel falls on the second toe. In conditions like metatarsus adductus, the line falls on the third, fourth, and fifth toes according to severity.[7]

Table 1: Future prediction through physical features of nails.

Physical feature	**Future prediction as per *Lakshanadhyaya* (Probable justification)**
Thick	Of teachers (*Asthi Sara Purusha* are enthusiastic and very active which make them appropriate for teaching)[8]
Stripped and long protuberant	Good longevity
Protuberant with rounded end and small	For happy Life
Depressed like Oyster or husk	Poor
Dry	Miserable persons
Cracked	Slaves
Unctuous, thin, smooth, coppery Flowered	Of administrators
Discolored	Of addicts
Large	For average life
Thick, white, irregular	Make the person monk
White and round	Short life

Table 2: Future prediction through physical features of soles.

Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Corpulent, well formed with upward lines	Good longevity, prosperous, and administrators
Mark of Swasthika, plough, lotus, conch shell, wheel, horse, elephant, chariot, weapon	Are of kings (as per Samudra Shastra)[9]
Coppery and smooth	Of Lucky persons
Upward bent	Are of persons with medium wealth and longevity
White	Of poor
Without lines	Of servants
With so many lines	Of ill persons

As mentioned in Table 2, *Acharya Kashyapa* has given the detailed physical features of soles along with future prediction. Probable clinical importance of corpulent, well formed with upward lines indicative of the description of a "corpulent well-formed foot with upward lines in the soles of newborns and children" is typically associated with congenital hypothyroidism. Coppery and smooth soles in children and newborns are indicative of congenital syphilis. Upward bent soles in children and newborns are indicative of a condition known as congenital talipes equinovarus (CTEV), commonly referred to as clubfoot. White soles in children and newborns can be indicative of vitiligo or pallor due to anaemia. The absence of normal creases or lines on the soles of newborns and children can be indicative of Down syndrome (Trisomy 21) or prematurity. An excessive number of lines or deep creases on the soles of newborns and children can be indicative of palmoplantar keratoderma or a genetic syndrome such as Ehlers-Danlos syndrome. May be indicative of disorders like XP 13 (Xeroderma pigmentosum).

Table 3: Future prediction through physical features of heels.

Physical features	**Future prediction as per *Lakshanadhyaya* (Probable justification)**
Well rounded smooth heels	Become endowed with all the best qualities
Small heels	Short lived and without progeny
Flat heels	Adulterous

As mentioned in Table 3, *Acharya Kashyapa* has given the detailed physical features of heels along with future prediction and probable clinical importance of small heels in children and newborns are often associated with Congenital Adrenal Hyperplasia (CAH), particularly the salt-wasting form. Another potential condition to consider is intrauterine growth restriction

(IUGR). Flat heels in children and newborns can be indicative of flatfoot (pes planus), which is often a normal variant in infants and young children due to the presence of a fat pad that supports the arch. Flatfoot indicative of Ligamentous Laxity seen in conditions like Ehlers-Danlos Syndrome generalized hypermobility, cerebral palsy or muscular dystrophy, Tarsal Coalition.

Table 4: Future prediction through physical features of feet.

Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Long fingers, nails and feet	Are of persons with good longevity
Short fingers, nails and feet	For short life
Compact fingers	Lucky
Well covered joints	Are of pleasure seeking
Thick joints	Teachers
With thick body hair	Are poor
Protuberant, with invisible veins and hairless dorsum of the foot	Praiseworthy
Uneven and opposite to above qualities	Are of thieves

As per Table 4, feet with probable clinical importance of short fingers, nails, and feet in a child or newborn can be indicative of achondroplasia or syndactyly. Thick body hair in children and newborns can be indicative of congenital adrenal hyperplasia (CAH) particularly the virilizing form. Protuberant, with invisible veins and hairless dorsum of the foot present during pedal edema, veins disappear, e.g., nephrotic syndrome, Cushing syndrome, and cretinism.

Table 5: Future prediction through physical features of ankles.

Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Well covered, small, hairless, and without visible veins	Praiseworthy
Big, large	Are of loss of wealth and sorrow

As mentioned in Table 5, Probable clinical importance big or large ankles in children and newborns can be indicative of Lymphedema, Congenital Hypothyroidism, Edema from Cardiac Conditions, Juvenile Idiopathic Arthritis (JIA), Seen in rickets[10] and mucopolysaccharidosis.[11]

Table 6: Future prediction through physical features of lower Leg and Leg.

Lower leg	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Thin	Praiseworthy
Thick	Loss of husband, son, health, and happiness and is of thieves
Leg	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Compact, without visible veins, hairless	Praiseworthy
Wasted, thick, having visible veins and hair	Disgraceful

During examination of lower extremities [Table 6], in addition to given physical features, various colors can also be inspected to find any venous insufficiency (bluish, purple discoloration) and vascular changes such as ischemia, cellulitis, sepsis, and gangrene (dark blue-black discoloration). Muscle tone can be examined for flaccidity (hypotonia) and spasticity (hypertonia). Probable clinical importance of thick lower leg indicative of pseudohypertrophy in DMD[12] (Duchene Muscular Dystrophy), elephantiasis (non pitting edema). Wasted, thick leg, having visible veins and hair indicative of wasted in muscle atrophy and poliomyelitis Engorged visible vein in DVT (Deep vein thrombosis) (varicosity).

Table 7: Future prediction through physical features of Knee, Thighs and Buttocks.

Knee	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Well covered	Praiseworthy
Thighs	
Fleshy with deep-seated veins and smooth thighs	Good **(**Normalcy in physical health is always good**)**
Buttocks	
Rounded**,** symmetrically and without any pathological lesion	Praiseworthy
Elongated	For loss of superiority
Large and bulky	For harlotry
Wasted and small	In childless persons, for modesty

As mentioned in Table 7, Probable clinical importance of Large buttocks indicative of Lipomatous Hypertrophy, Lymphedema, Sacrococcygeal Teratoma, Congenital hypothyroidism, Prader-Willi Syndrome, Obesity, Congenital Lipodystrophy, Sign of kwashiorkor and marasmus.

Table 8: Future prediction through physical features of Ischial tuberosity.

Ischial tuberosity	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Deep, hairless, symmetrical	Appreciable and praiseworthy
Narrow and adhering together	Shorter life span
Large	Longer life span
Pelvis	
In comparison to the chest, large waist in girls and large chest in boys	Praiseworthy

As mentioned in Table 8, Probable clinical importance of narrow and adhering together of Ischial tuberosity indicative of Sirenomelia (Mermaid Syndrome), Caudal Regression Syndrome, Congenital Hip Dysplasia/Developmental Dysplasia of the Hip (DDH), Sacral Agenesis.

Table 9: Future prediction through physical features of Scrotum and Penis.

Scrotum	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Reddish, pink and hairy	Average life span
Corpulent	Praiseworthy
Slim and hairless	Are of misfortune, loss of potency and progeny
Having shape similar to bull, donkey, horse, goat and sheep	For the persons of good luck and long life
Penis	
Soft, long, erected penis with big coppery, uncovered glance, large prepuce, and large meatus	Praiseworthy and fruitfull
Thin, short, too much long, without covering, with white or black discharges, covered on left side	Not good
Broad and cart shaped	Good having more progeny Suggestive of fruitfulness

As mentioned in Table 9, probable clinical importance of Slim and hairless scrotum indicative of undescended Testes (Cryptorchidism), Congenital Adrenal Hyperplasia (CAH), Hypogonadis, Prader-Willi Syndrome, Prematurity. Large prepuce, thin, short, too much long without covering, with white or black discharge on the left side indicative of Congenital Phimosis, Balanoposthitis, Paraphimosis, Hypospadias with associated anomalies, Lichen Sclerosis, Traumatic Injury or Infection.

Table 10: Future prediction through physical features of vagina.

Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Cart shaped	Ideal for progeny
Corpulent	Good fortune
Elongated cervix	Death of progeny
Upward, pushed cervix	For infertility
Pin-hole cervix	Indicated for misfortune
Excesively dilated vaginal canal, constricted, dry, elongated, uneven, and vulva without clitoris	is for anguish
Vulva compact and dense in center	For birth of female child
Protuberant, beautiful, and fleshy	For birth of son
Covered with spots and moles	Virtuous
Rounded, with corns and fat	Whoredom and wandering

As mentioned in Table 10, Probable Clinical importance of elongated cervix indicative of Congenital Mullerian Duct Anomalies, Cervical Prolapse, Congenital Cervical Elongation, Connective Tissue Disorders (e.g., Ehlers-Danlos Syndrome). Upward, pushed cervix indicative of Uterine Prolapse (Congenital), Pelvic Mass or Tumor, Imperforate Hymen or Vaginal Agenesis, Pelvic Congenital Abnormalities. Pin hole cervix indicative of Congenital Cervical Stenosis, Hypoplastic Cervix (Associated with Mullerian Agenesis). A mole indicative of benign spot. Tiny dark. Spots over the vulva may be seen as angiokeratoma due to dialation of small blood vessels (capillaries)[13] Rounded, with corns and fat indicative of bartholin's gland cyst, vulvar varicosity.

Table 11: Future prediction through physical features of Abdomen and Umbilicus.

Abdomen	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification**
Well /slightly protuberant Not laxed, no hard, and not very big	Praiseworthy
Extra hairy Covered with visible veins	For wandering For eating
Depressed emaciated	For poverty
Symmetrical	For mediocre
During pregnancy- protuberant toward the right side	Predicts birth of male child
During pregnancy- protuberant toward the left side	Predicts birth of female child
Protuberant and asymmetrical	For irregular nature and pleasure seeking
Excessively emaciated	Predicts infertility
Abdomen of women thick in the lower side, very big, with absence of folds	Short life

Umbilicus	
Deep slightly turned toward right side with rounded protuberant edges, free from hair, veins and folds	Appreciable and praiseworthy
Cave like in shape and not protuberant in edges	Causes pleasure and sorrow
Irregularly protuberant	Shorter life span
Small in shape	Infertility
Situated at abnormal phase	Wanderer
Big, deep, protuberant in edges	Is of administrators

During per abdomen examination [Table 11], *Kashyapa Acharya* has given detailed features of abdominal folds, which is related to good fortune till it remains within four. If abdominal folds are too many, then that is for less wealth and short life. These folds appear because of the accumulation of adipose tissue, indicative of obesity, and if obesity is severe, then they will lead to bad fortune for that baby, if not intervened by proper medication. Probable Clinical importance in newborns and children, the presence of excess hair (hypertrichosis) and visible veins on the abdomen can be indicative of certain medical conditions such as Beckwith-Wiedemann Syndrome (BWS). A depressed and emaciated appearance of the abdomen in newborns and children can indicate of Malnutrition or Failure to Thrive (FTT), Congenital Infections (e.g., TORCH Infections), congenital condition such as Jeune Syndrome (Asphyxiating Thoracic Dystrophy), Congenital Diaphragmatic Hernia (CDH), Metabolic Disorders (e.g., Inborn Errors of Metabolism), Diarrheal Disorders (e.g., Celiac Disease, Inflammatory Bowel Syndrome), Cystic Fibrosis. A protuberant and asymmetrical abdomen in newborns and children can be indicative of various conditions including Renal Masses such as Wilms Tumor or Multicystic Dysplastic Kidney, Hepatomegaly, or Neuroblastoma. The distended abdomen in women and an observation of a "thick" lower abdomen without folds possible diagnosis could be ascites or abdominal distension related to liver disease, such as congenital liver disease or hepatic fibrosis. The description suggests a protrusion or mass on the right side of the abdomen. This is a presentation that might suggest an Umbilical hernia, Omphalocele, Gastroschisis in a child or newborn. A "cave-like" shape with non-protuberant edges at the umbilical cord indicating an umbilical hernia with retraction, diastasis recti, or an umbilical cord anomaly, Patent Urachus (Urachal Remnant). An irregularly protuberant umbilical cord in children or newborns suggest conditions such as an umbilical hernia, umbilical granuloma, Umbilical Polyp, Omphalitis, Umbilical Cord Hematoma or Cyst. A small umbilical cord in children or newborns can be indicative of short

umbilical cord, hypoplastic (underdeveloped), Single Umbilical Artery (SUA), Amniotic Band Syndrome.

Table 12: Future prediction through physical features of flanks.

Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Rounded, fleshy, smooth even broader in the upper side with absence of hair, fold and visible veins	Appreciable and praiseworthy
With hair and visible vein	For wandering
Depressed in middle	Longer life span
Bent	Sorrow full
Small or narrow	Short life span

As mentioned in Table 12, Probable Clinical importance of flanks with hair and visible veins indicative of Neonatal Sclerema, Congenital Heart Disease, Portal Hypertension, Certain metabolic disorders, such as glycogen storage diseases or disorders that affect the connective tissue (like Marfan syndrome or Ehlers-Danlos syndrome), bent indicative of Congenital Muscular Torticollis, Congenital Diaphragmatic Hernia (CDH), Scoliosis, Prune Belly Syndrome (Eagle-Barrett Syndrome, Asymmetric Growth or Developmental Abnormalities. Small or narrow flanks indicative of Intrauterine Growth Restriction (IUGR), Prader-Willi Syndrome, Congenital Muscular Dystrophies, Turner Syndrome, Marfan Syndrome, Cystic Fibrosis, Constitutional Growth Delay.

Table 13: Future prediction through physical features of Shoulders and axilla.

Shoulder	
Physical features	**Future prediction as per *Lakshanadhyaya* (probable justification)**
Emaciated	Is poor
Corpulent	Of weak
Tough	Of brave
Lax	Of weak person
Elevated in male	Praiseworthy
Axilla	
Elevated, big, corpulent, well made Women with strong and hairy	Appreciable Inauspicious

As mentioned in Table 13, An emaciated or visibly thin shoulder in children and newborns could be indicative of Muscle Atrophy, Congenital Muscular Dystrophy, Malnutrition, Erb's Palsy, Infections or Systemic Illnesses. A corpulent or unusually large shoulder indicative of Obesity, Muscle Hypertrophy, Erb's Palsy, Congenital Anomalies, Acromegaly. A lax or

hypotonic shoulder in children and newborns can be indicative of Hypotonia (Low Muscle Tone), Cerebral Palsy, Down Syndrome, Neuromuscular Disorders such as congenital myopathies or dystrophies, Erb's Palsy, Muscular Dystrophy, Birth Injury, Metabolic or Systemic Conditions, Elevated shoulder in male and lax in females because of clavicular structure.[14]

CONCLUSION

Acharya Kashyapa has dealt with all the aspects of paediatric examination from newborns to adolescents like nail, abdomen, vaginal, scrotum, penis, hair, various joints, back, gait, etc., along with the prediction of their future life. Future prediction is giving the idea of their health (and helps for early detection of impending clinical manifestation), wealth, and social and family appraisal. This indicates that basic instincts governing future life can be examined by the erudite paediatrician.

As, lifestyle and civilization of current era is different than the ancient era of *Kashyapa Samhita*, the future prediction related to health is only important and feasible and the rest of the predictions cannot be made in current days. But possible correlations and its practice in routine clinics might help to identify the present and future problems of the paediatric patients.

REFERENCES

1. Pandita Hemaraja Sharma, Kashyapa Samhita, Reprint, Chaukhambha Sanskrita Samsthana, Varanasi, Sutra Sthana Chapter, 2008; 25: 4-33.
2. Patel DP, Swink SM, Castelo-Soccio L. A review of the use of biotin for hair loss. Skin Appendage Disord, 2017; 3: 166-9.
3. Pitukweerakul S, Pilla S. Terry's nails and Lindsay's nails: Two nail abnormalities in chronic systemic diseases. J Gen Intern Med, 2016; 31: 970.
4. Lee JS, Kim KB, Jeong JO, Kwon NY, Jeong SM. Correlation of foot posture index with plantar pressure and radiographic measurements in paediatric flatfoot. Ann Rehabil Med, 2015; 39: 10-7.
5. Butler RJ, Hillstrom H, Song J, Richards CJ, Davis IS. Arch height index measurement system. J Am Podiatr Med Assoc, 2008; 98: 102-6.
6. Talar tilt. Wheeless' Textbook of Orthopaedics, presented by Duke Orthopaedics. Available from: http://www.wheelessonline. com.

7. Marshall N, Ward E, Williams CM. The identification and appraisal of assessment tools used to evaluate metatarsus adductus: A systematic review of their measurement properties J Foot Ankle Res, 2018; 11: 25.
8. Charaka Samhita, Viman Sthana, Rogabhishagjitiya Vimana, 8: 107. Available from: http://niimh.nic.in/ebooks/echarak
9. Srivastava CM. Samudrik Shastra. Delhi, India: Manoj Publications, 2004.
10. Arora A. Self-Assessment and Review of Pediatrics. Delhi, India: Pulse Publication, 2011; 46: 3.
11. Colmenares-Bonilla D, Colin-Gonzalez C, Gonzalez-Segoviano A, Esquivel Garcia E, Vela-Huerta MM, Lopez-Gomez FG. Diagnosis of mucopolysaccharidosis based on history and clinical features: Evidence from the bajio region of Mexico. Cureus, 2018; 10: e3617.
12. Santhanam I. Neurology. In: Illustrated Textbook of Pediatrics. Delhi, India: Jaypee Brother Medical Publishers, 2018; 871: 21-1.
13. Das S, editor. A Manual on Clinical Surgery. Kolkata: Published by DR Das, 2013; 54: 3-10.
14. More KL, Dalley AF, Agur AM, editors. Moore Clinically Oriented Anatomy. (South Asian Edition). New Delhi: Published by Wolters Klower (India) Pvt Ltd, 2013; 7: 683.