A CASE STUDY - KRIMIJANYA INDRALUPTA WITH SPECIAL REFERENCE TO ALOPECIA AREATA

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ABSTRACT

Many Ayurvedic texts mentioned hair disorders under *Kshudra roga* topic commonly with terms *Khalitya, Palitya, Indralupta, Darunaka* but Sushruta separately mentioned it as *Raktadoshaja vikara* in Sutrasthana while Vagbhatta has included in chapter *Shiroroga pratishedha*. *Indralupta* or Alopecia a dermatological disorder is of great concerns to male, female as well as children's too which can cause psychological stress to all. Other than a common pathology of *Indralupta* depicted by most of Acharyas, Sushrutacharya has indirectly mentioned *Krimi* or worm infestation may be one of the etiopathological/causative factors. This study represents a case of alopecia in a child without any history of major chronic disease or hormonal disorder. *Shonitaja krimi, Raktapradoshaja* pathogenesis, bald patches along with digestive problems depicts the diagnosis *Krimijanya Indralupta* which can be correlated with Alopecia areata**.** Due to child age instead of *Shodhana* (purification methods), *Samshamana* therapy having *Krimighna, raktaprasadak* and *keshya* properties were used which gave better results. After 03 months treatment excellent improvement was noticed i.e 75% hair roughness was minimized, more than 75% hair fall was stopped and upto 100% in hair loss means not a single bald patch was seen. Results were calculated on the basis of evaluation criteria for improvement in subjective symptoms of *Indralupta* (Alopecia). The study concludes that subtype, *Raktaja krimi* directly affect the hair roots causing hair loss along with digestion problems which clearly signifies diagnosis whereas *Krimighna* drugs not only remove the *krimi*, but also balances vitiated *doshas* and improves digestion which is helpful for nourishment of hairs.

Key words: *Kshudra roga, Khalitya, Palitya, Indralupta, Darunaka, Raktadoshaja vikara,*

INTRODUCTION

Hair, since ancient times are considered as a sign of beauty and its importance are explained under the topic of Cosmetology.

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Healthy hairs enhances our personality whereas loss of hairs and its associated problems like premature graying of hair, dandruff or baldness causes negative impact towards the individual also affecting the quality of life indirectly. Today, various harmful synthetic products, therapies or implantation like process are adopted which are very expensive that not only causes economic burden but immense psychological and emotional

stress to individual, concerned parents and siblings too.

Globally, Alopecia[1, 2] a dermatological disorder is of great concerns to male, female as well as children's too. More than 100-150 hair falls per day or thinning of hairs is considered as hair loss or alopecia it may be temporary or permanent. Recent data shows tendency of hair fall has been increased since last two decades. Currently children's hair loss is responsible for approximately 3% of all pediatrics. Majority of children above 2 years or older are suffering a lot. With a proper diagnosis, most cases of hair loss can be treated successfully. If not treated within time then about 5% of cases the disease progresses to alopecia totalis i.e. loss of all of the hair on the scalp and some may develop Alopecia universalis i.e. a total loss of body hair.

Kaumarabhritya, branch of world's oldest system of health care i.e. Ayurveda merely describes child disorders. While treating children disorders, a perfect causative factor must be ruled out for using few, easily applicable, safe and cost effective drugs giving impressive results without any adverse reactions along with assurance of non-recurrence. The utilization of Ayurvedic drugs traditionally is well known, proved in hair disorders on the basis of evidences. In present case study, *Indralupta* or Alopecia in a child has been presented which has changed the future of the individual child within three months of regular therapy.   Ancient text, Manusmruti has an explanation about "*Murdhajakalpa*" which is nothing but the setting of hair. In *Brihattrayee samhitas Kesha* is mentioned as mala of *Asthi dhatu*[3,4, 5] while *Sharangdhara* mentioned as *updhatu* of *Majja*[6]. Most of Acharyas have mentioned *kesha vikara* / hair disorders under the topics of *Kshudra roga* except Vagbhatta mentioned as *Kapalagata rogas*. Some common hair disorder terms mentioned in texts are *Khalitya* means gradual falling of hairs, *Palitya* means premature graying of hairs, *Indralupta* means sudden hair loss in form of patches or baldness and *Darunaka* means fungal infection of the scalp.

इन्द्र इन्द्रवणालः केशो लुप्तायस्मात् ।

इन्द्राणा इन्द्रनालवर केशानां लुप्त नाशो यस्मात् ।

Shabdakalpadrum pp 211.

इन्द्रलुप्त शिरा मूर्ध्न स्निग्धास्वन्नस्य माक्षयत् ।[7]

Sushruta has clearly mentioned that in *Indralupta*, the vein of head should be punctured after oleation (*snehana*) and sudation (*swedana*) then paste of some herbo-minerals should be applied.

This quote clarifies that Indralupta can be considered as patchy hair loss on scalp, face or any other region also.

Some of the common factors contributing to hair fall/loss:

As per Ayurveda, Over consumption of *Kshara*, *lavana*, regular consumption of *Viruddhahara*, *krimi*/worms infestation, angry, irritant nature or ignorance of *Pratishyaya* (which converts into *Dushta pratishyaya*) etc.

There is always a difficulty to diagnose hair disorders as it may be subjective complaint or true disorder and also to analyze its pathogenesis[8]. Hair loss sign may be an important clue towards multisystem disorders like Autoimmune, Hormonal or worms infestation, which can lead to unexplained developmental delay.

Pathogenesis/*Samprapti*:

Common pathology depicted by most of Acharyas has emphasized that vitiated *Pitta* along with *Vata* enters the *romakupas* (hair follicles) causing hair falls (*Khalitya*) and thereafter *Shleshma* along with *Shonita* obstructs the process of regeneration of new hair causing the condition *Indralupta* (Alopecia), but such type of pathogenesis mainly occurs in adults. Sushruta has mentioned *Indralupta* as *Raktapradoshaja vikara*[9] while Vagbhatta has included hair disorders under the chapter *Shiroroga pratishedha*[10]. Because of some potent causes which vitiate *pitta* and *rakta* like *teekshna, ushna, kshara, lavana dravya, viruddhahara, apathya aahar vihara* (unwholesome diet and lifestyle), *adhyashana* etc. produces *raktadushti* which dries vitiated *kapha* causing obstruction at hair follicles.

The second type of pathogenesis, being a *mala* of *Asthi dhatu*, the disturbance in metabolism or *dhatu kshinata* plays an important role to cause *Indralupta*. Charaka has mentioned hair disorders as *Asthi pradhoshaja vikara*[11].

क्रामभ्यः कशनाशस्स्यात तस्य नामन्द्रलुप्तकम् ।[12]

In third type of pathogenesis responsible etiological factor for *Indralupta* mainly in child age is *Krimi* i.e. worms infestation which arises due to some of the above mentioned causes like *viruddhahara, adhyashana* etc. Hairs are the part of largest organ i.e. skin so Sushruta and Madhava Nidan have considered *krimi* also one of the causative factor for *Kushtha,* a major skin disorders[13, 14]. In Ayurvedic texts *Abhyantara krimi* are of four types i.e. *purishaja, shleshmaja / kaphaja, shonitaja / raktaja* and *malaja* while Sushruta clearly mentioned *viruddhasana, ajeerna* and leafy vegetables as main causes. Further *Shonitaja krimi* has been divided into seven subtypes *keshada, romada, nakhada, dantada, kikkisa, kusthaja* and *parisarpa* by Sushruta[15] while Charaka and Madhavanidana mentioned only six subtypes as *keshada, lomada / romavidhvansa, lomadvipa / romadvipa, udumbara, saurasa* and *jantumatara/ matara*[16]. *Raktavahi sira/dhamani* (blood vessels) are their surviving *sthana*/place where as they havoc/ruins the hairs of head, beard, moustache, eyelids and body which can be clinically correlated to hair loss/Alopecia. If not treated early or their number increases (*ativruddhi*) they can engulf the skin, vessels, muscles, tissues and even cartilage[15]. Numbers of hairs are equal to number of *sira* and *dhamani* in the body[17].

According to Modern science –

Human hairs grow and fall that's a very normal growing process. But in some people the rate at which hair falls is much greater than the rate at which it grows. If hair falls from the follicles i.e. the hair roots, than the chances that it will grow back again from that point are almost zero. The result is that the person become blado in the medical world, this condition is called as alopecia. *Alopecia areata*[1] is a chronic, organ-specific autoimmune disease, which affects hair follicles and sometimes the nails. Loss of hair causing bald patches without scarring of the affected area may affect the entire scalp. Modern life style, avoidance of head bath, usages of harmful shampoos, allergic manifestations, reduced body resistance, hormonal imbalance, and malnutrition lead to poor hygiene of scalp[2].

Types of alopecia -

Scarring type: inflammation and hair loss including follicles and creates smooth scalp

Non scarring type: hair follicles are preserved, but hair shafts go away

Its clinical presentation –

1. Oval bald patch (commonly seen, smooth, shiny involving the scalp or any other hair-bearing area).
2. 'Exclamation-mark' (broken, short hairs that taper proximally, present at its margin)
3. Pattern may be - Classical patchy (most common), Reticulated pattern, Ophiasis band like (hair loss in the parietal temporo-occipital scalp) and Sisaphio (a band of hair loss in the frontal parieto-temporal scalp).

1. According to extent of hair loss -

a) Alopecia *areata* - typical form with sudden partial hair loss causing bald patches on scalp.

b) Alopecia *totalis* - Untreated alopecia areata or not responding to treatment then complete baldness (100% loss of scalp hair).

c) Alopecia *universalis* - When the entire body suffers from complete hair loss, (100% loss of hair on the scalp and body).

Evaluation of hair loss in a child should always include a detailed history, physical examination and microscopic examination of the hair. Along with hair loss history, onset of hair loss (sudden or insidious), extent of alopecia (localized or diffuse), any hair shaft anomalies, signs of inflammation and associated symptoms must be notified.

CASE STUDY

A 9 years old boy visited RARISD, OPD with C.R.no.-3020/2015-16 on 23.01.2016 with -

Chief complaints: 4 to 5 oval shape bald patches on scalp since 4 - 5 months without any itching or tingling or pain like sensation and sudden loss of hairs mostly while combing and after bath.

Systemic examination

1. Appetite/*kshudha* - normal
(But consumption of food quantity less)
2. Pulse   - 86/min.
3. Tongue   - normal/*niraama*
4. Skin   - dryness, *nisteja*
5. Stool   - irregular

6. Urine   -WNL/ no complaints
7. P/A   - Non specific

Investigations:
Haemoglobin   - 13.0 gm /dl
ESR   - 06
Personal history: Dribbling of saliva from angle of mouth during sleep since 3-4 months; *karshyata* (weak/lean body); unsatisfied weight gain as per age since one year; *tandra* (feeling of sleepiness), *aalasya* and *aruchi* (Anorexia).
Family history: None.

Clinical assessment
1.To assess the effect of therapy, subjective symptoms criteria like hair texture, hair fall and hair loss (**Table 1**) were considered.
Evaluation of results was done on the basis of Improvement (%) (**Table 2**).
2.Photographs: Before & After treatment was observed.

Table 1: Assessment Criteria for subjective symptoms of *Indralupta*:

1. Hair texture examination	Score
Smooth hair surface	0
Occasional roughness of hair surface	1
Slight roughness of hair surface	2
Rough hair surface	3

2. Hair fall > 100 per day	Score
Absent 0 - 50	0
Mild (hair fall on washing) 51 - 100	1
Moderate (hair fall on combing) 101- 150	2
Severe (hair fall on simple strengthening) > 150	3

3. Hair loss or Alopecia	Score
Scalp not seen by naked eye	0
Scalp slightly seen by naked eye	1
Scalp can be seen by naked eye/thinning of hairs	2
Scalp clearly seen by naked eye/bald patch	3

Table 2: Evaluation of improvement on subjective symptoms of *Indralupta*:

1. Hair texture	Improvement	Result %
Rough hair surface	Poor to Less	0-25
Slight roughness of hair surface	Fair	50
Occasional roughness of hair surface	Good	75
Smooth hair surface	Excellent	100

2. Hair fall	Improvement	Result %
Severe > 150 (hair fall on simple stretching)	Poor or Less	0-25
Moderate 101- 150 (hair fall on combing)	Fair	50
Mild 51 - 100 (hair fall on washing)	Good	75
Absent 0 – 50	Excellent	100

3. Hair loss	Improvement	Result %
Scalp clearly seen by naked eye/bald patch	Poor or Less	0-25
Scalp can be seen by naked eye/ thinning of hairs	Fair	50
Scalp slightly seen by naked eye	Good	75
Scalp not seen by naked eye	Excellent	100

On local examination: Smooth, shiny appearance of bald patches without black spots or exclamation of hairs. No signs of inflammation or dandruff.
Measurements: (Photograph 1: Before treatment) - 03 major bald patches since 4 - 5 months:
1. 5 x 3.3 cms on parietal aspect
2. 4 x 3 cms on left of upper occipital region
3. 3 x 2 cms on right of temporal- parietal region
02 small bald patches since 02 months
1. 2.5 x 2 cms on left of lower occipital region (3 cms behind the left ear)
2. 1 x 1 cms on right of lower occipital region

***Samprapti Ghataka* (etio-pathological factors)**
Dosha- Pitta, kapha;
Dushya- Rasa and *Rakta*;

Srotas dushti - *Rasavaha* and *Raktavaha* (sira/dhamani)*;
Sthana - *romakupas* and *Annavaha Srotas*;
Utpadaka hetu - *Krimi*.
Provisional diagnosis: *Indralupta* and *Krimi*
Diagnosis: *Krimijanya Indralupta*
Subjective symptoms examination: (Table 1)
Hair texture (on touch) : roughness   (**Score 3**)
Hair fall (on combing)   : > 100   (**Score 2**)
Hair loss (Scalp only)   : bald patches   (**Score 3**)

Line of treatment:
1. *Krimighna*
2. *Pitta shamaka* and *Raktaprasadak*
3. *Keshya*
4. *Rasayana*

Treatment:
1. *Vidangadya lauha* (AFI. Vol. I, 21:10 - IMPCL, Uttarakhanda) - 1 BD along with meals.
2. *Dhatturadi taila* (*Sahasrayoga* - IMPCL, Uttarakhanda) with coconut oil - local application over scalp before sleep twice weekly (Applied to scalp and done gentle massage for 5-10 minutes)
3. *Kasis bhasma* + *Bhringaraj churna* - paste applied one alternate day on bald patches only in morning hours (for 30 minutes only).
4. *Chyavanaprasha* – 2.5 gms OD in morning empty stomach was prescribed after 03 months of therapy for next 03 months.

Treatment protocol: Includes drugs, diet and lifestyle changes for non-recurrence of disease.
***Nidana parivarjan*:** Avoid all the causative factors mentioned also milk, leafy vegetables, curd etc.
***Sanshodhana Chikitsa*:** *Shodhana* procedures like *Nasya*, *Prachchhana karma*/ *raktamokshana* etc.

इन्द्रलुप्त सिरा मूध्नि स्निग्धास्वन्नस्य माक्षयत् ।[7]

Samshamana: *Shiroabhyanga*, *Shirolepa* externally along with oral medicines and *rasayana* should be preferred as per pathogenesis.

But Sushruta has mentioned that *Raktaja krimi* (*romada*) should be treated same as *Indralupta* which indirectly suggests it might be one of the etiological factors for hair loss[18].
***Krimighna*:** There are so many *Krimighna*/anthelmintic formulations used like

Krimikuthar ras, Vidangarishtha, Vidangadi churna, Kankayan guti, Kapila vati, Kutajarishtha, Navayas Churna etc. But due to child age factor and *Raktapradoshaja* pathogenesis, *Vidangadya loha* formulation was preferred. *Vidanga* well known *Krimighna* drug but lauha also has *krimihar* action as mentioned in *Trapvadi varga* in Sushruta[19].
Vidanga due to pungent, hot potency and laghu properties balances *Vata* and vitiated *kapha*, stimulates appetite, increases digestive power, support the intestines, keep the digestive system healthy removes toxins, improves blood circulation and it is also known for its blood purifying properties. It not only kills all types of the intestinal worms but also destroys the habitat suitable for worms.
Loha bhasma is the main ingredient having *pitta shamaka, rakta prasadaka* and *krimihar* properties is useful in *krimi*, anemia, fatigue, cachexia, increases appetite, relieves constipation and enhances complexion/ *kantijanan*. It increases blood flow in the peripheral blood vessels of subcutaneous tissues in the scalp.
Keshya:

कशभ्या हत:वघनरन्जनादनातानुपकरातात ॥[20]

Keshya dravya or *keshya karma* means beneficial for hairs or useful in hairs disorders. They act either by purifying or by pacifying the vitiated doshas, nourishing hair follicles, maintain hair beauty and are useful in the treatment of hair disorders. As per mechanism of action these useful drugs are classified as *Keshya dravya* (hair tonics, hair growth promoting), *Srotorodha nashak* (removing the obstruction) and *Kesharanjaka* (hair dyes) etc.

रसवहस्त्रातारााधात् कशाना पाषण न भवात ।

Some drugs remove obstruction from *Rasavaha, Raktavaha* channels or at the hair follicles level (*romakupas*) and prepare way for nourishment of hairs while some corrects *Asthi dhatu* metabolism like *Musta, Guduchi* etc.

तत्र मृगराज: निगुडा च स्त्रात: शाधन कृत्व ।

कशाना पाषण करात कश: आस्यधातु मल: ॥

Bhringraj (Eclipta Alba, Family Compositae): *Katu, tikta rasa, katu vipaka, Ushna virya* and *teekshna, ruksha* qualities having *kapha vata*

shamak action and *keshya* property. It liquefies *Pichhila, guru* and *sheeta kapha* by *ruksha* and *ushna* properties and purifies the channels (*Srotosodhana*). It helps to eradicate infection by its *Krimighna, Kandughna* and *Vishaghna* properties. The leaves of the plant contain a rich amount of protein; its extract is considered a powerful rejuvenative and especially good for the hair. It prevents hair fall, rejuvenates the hair and restores the natural colour of hair by strengthening the roots of the hair, makes hair more manageable and brings damaged hair back to life.

***Kasis bhasma* (Ferrous sulphate) -** *Kashaya, katu, ushna, grahee* properties balances *vata* and *kapha*, *raktavardhaka,* increases blood circulation and useful in hair loss/alopecia conditions.

Dhatturadi/Dhurdhurapatradi thailam -useful for itching scalp, dandruff and hair fall. Due to *kandu* and *kriminashaka* action it eliminates dandruff, promotes growth of hair effectively by liquefying dried *Kapha* in the pores of scalp locally. It basically improves the scalp skin health and strengthens the hair root. It is good and safe for children to apply on head and body. So it was preferred instead of *Bhringaraja, Nilibhringadi, Triphaladi, Yashtimadhuka taila* etc.

घुघुरपत्रस्वरस तद्ब : श्लक्ष्ण चूण : ।

पक्व तल निहन्त्याशु कण्डू कशच्युत नृणाम् ॥

Sahasra yoga – Tailayoga Prakarana

Rasayana - *Chyavanaprasha* or *Amalaki rasayana* or *Narasimha rasayana* after therapy promotes hair growth by rejuvenation, *keshya, keshavardhana, balya* action.

***Pathya - Apathya* (Diet regimen):**

 Increase intake of Seasonal fruits (rich in fiber, prevents hair fall) like snake gourd, capsicum, bitter gourd, drumstick, radish, garlic etc. Drink fresh juices of carrot and spinach for aiding in hair growth. Sweet potatoes, orange vegetables like carrots, pumpkin and mangoes, filled with antioxidant beta carotene, which turns into vitamin A that helps to protect against dry, dull hair. It also encourages the glands in your scalp to make an oily fluid called sebum that keeps hair from drying out. Seeds, nuts, grains and Sprouts should be taken on a regular basis. Drink plenty of water (flushes out the toxins that have accumulated in body). Massage scalp/*Shiroabhyanga* and *pada abhyanga*, cleansing of scalp and hair is advised regularly**.**

Avoid Sweets, bread, jam, noodles, cheese, pastries and other bakery products and junk food specially milk, meat, curd, sours and cold things. Stop day sleep and over eating too.

Observation and Result:

On examining the child, bald patches signifies *Indralupta* but other than sudden hair loss signs dribbling of saliva during sleep, less consumption of food, *tandra, aalasya*, irregular defecation etc. drives attention towards abnormality of digestive system also weight gain was not proper as per age. All these signs were directing towards *Krimi vikara. Krimi* or worms is one of the most common and important aspect causing health problems in children. They manifest themselves by various symptoms not every child with worms will have all the symptoms, but few of these may help to diagnose. Due to *Krimi* and *Rakta pradhoshaja* pathogenesis there is loss in flexibility in the subcutaneous tissues of scalp which causes the reduction in the blood flow in the peripheral blood vessels that adversely affects hair follicles and hair growth.

 At the end of 3 months therapy, before treatment hair texture roughness (Score 3) was changed to occasional roughness (75%) means good improvement. In hair fall (Score 2) gradual cessation was observed giving excellent (75%) improvement whereas hair loss/bald patch (Score 3) not a single patch was seen with naked eyes showing excellent result (75 to 100%).

CONCLUSION

 In this study, *krimi* were the responsible factor for the development of pathogenesis/*samprapti* of *Indralupta* along with *Pitta* and *raktadushti. Shonitaja krimi,* subtypes directly affect the hair roots causing hair loss along with digestion problems which clearly signifies diagnosis. Result concludes that *Krimighna* drugs not only remove the *krimi*, but also balances vitiated *doshas* and improves digestion helpful for nourishment of hairs. *Lauha* supplements mainly acts as *pitta shamaka* with *raktaprasadak* action. Whereas locally applied drugs cleanses channels

(*Srotosodhana*), enhances peripheral blood circulation towards hair follicle which facilitates good absorption of drugs, cessation of hair loss, strengthening hair roots and promoting growth of new hairs.

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Photographs 1: Before treatment

From above: Temporal & parietal view   Occipital view

Photographs 2: After treatment

From above: Temporal & parietal view   Occipital view

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