

## CONCEPTUAL STUDY OF SANGATMAK VIKRUTI IN RUDDHAPATH KAMALA CAUSED BY GALL STONES

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### ABSTRACT

Ayurveda is ancient medical science. In our ancient samhita, *Kamala vyadhi* is briefly described. *Kamala* is *Pittaj Nantmaj* as well as *Raktapradoshaja vyadhi*. Charakacharya has considered *Kamala* as advanced stage of *Panduroga*. Shushrutacharya has considered *Kamala* as a separate disease and also may be due to further complication of *Panduroga*, whereas Vagbhatacharya described *Kamala* as a separate disease. *Kamala* can be correlated with jaundice in modern medical science. There are mainly 2 types of *Kamala*- A) *BahuPitta Kamala (Koshtha Shakhashrita)*. B) *Ruddhaphath Kamala (Shakhashrita)*. Here we discuss *Sangatmak Vikruti* in *Ruddhaphath Kamala* due to gallstone with reference to USG findings.

**KEYWORDS:** *Ruddhaphath Kamala, Sangatmak Vikruti*, Gall stone, USG.

### INTRODUCTION

The presence of jaundice is usually, but not always, a sign of liver disease. The causes of jaundice are many and range from the common to the rare. The most common causes encountered are infective hepatitis, obstruction to bile ducts by gall stones or tumors, alcoholic liver disease, drugs, etc.<sup>[1]</sup>

In Ayurveda, *Kamala* is the disease related with *Pitta Dosha*. It is included under *Pittaja Nanatmaja Vyadhi* and *Raktajapradoshaja Vyadhi*. In Ayurvedic classics, *Kamala* is considered as *Raktapradoshaja Vyadhi*. It is a disease of *Raktavaha Srotas*. *Yakrut* (liver) and *Pleeha* (spleen) are the *Moola* of *Raktavaha Srotas*.<sup>[2]</sup> Acharya Charak also considered

*Kamala* as an advance stage of *Pandu Vyadhi*. When *Pandu Rogi* or patient who cured from *Pandu* continues to take *Pitta Vardhak Ahara* then this causes excessive aggravation of *Pitta Dosha* and gives rise to *Kamala*.<sup>[3]</sup> Acharya Sushrut has considered *Kamala* as separate disease and also may be due to further complication of *Panduroga*<sup>[4]</sup> when patient of *Panduroga* or person affected with other diseases consumes *Amla*, *Tikshna* etc. *Pitta Vardhak Ahara*, that may lead to initiation of *Kamala*. whereas Acharya Vagbhat has described *Kamala* as a separate disease<sup>[5]</sup> He takes *Kamala* as middle course and says that it may be either as a sequel to *Pandu* or without it independent. *Pitta Dosha* is one among three physical *Doshas*-*Vata*, *Pitta* & *Kapha*, Constituted by *Agni Mahabhuta*. *Pitta* includes all those factors responsible for digestion and metabolism. The colour of *Pitta* is *Peeta* (yellow), *Neela* (blue) and sometimes *Harita* (green). It was pointed out that *Pitta Vrudhi Lakshana*, is a responsible colouring factor of *Peeta* in the sense that abnormal colour such as *Pitta*, *Haridra* manifestation they become characteristic features of *Kamala Roga*. There are five types of *Pitta-Pachaka*, *Ranjaka*, *Bhrajaka*, *Sadhaka* and *Alochaka*. Site of *Pitta* is *Amashaya* (stomach). *Ranjaka Pitta* and its *Sthana Yakrut* are also involved in its *Samprapti*. *Ranjaka* refers to bile pigments. *Pitta* refers to bile salts. Bile salts have choleretic action that stimulates the secretion of bile from liver. It is this *Ranjaka Pitta*, which provides an exceedingly valuable tool for the diagnosis of both *Koshthashrita Kamala* as well as *Shakhashrita Kamala*.

**Table no. 1: References of *Ruddhpath Kamala* (*Shakhashrit Kamala*) observed in following Samhitas.**

Types of <i>Kamala</i>	Charak Sutrasthan [10]	Sushrut Sutrasthan [5]	Astang Hriday [6]	Madhav Nidan <sup>¶</sup>	Sharangdhar Samhita. [12]	Bhuprakash [13]
(Shakhashrit) <i>Ruddhpath Kamala</i>	+	+	+	+		+

**Gallstones**, also called **cholelithiasis**, are concretions that may occur anywhere within the biliary system, most commonly within the gallbladder.

Gallstones occur in ~10% of the population with a predominance in women (F: M = 2:1).

- **Fair:** more prevalent in the Caucasian population<sup>[6]</sup>
- **Fat:** BMI >30 kg/m<sup>2</sup> and hyperlipidemia<sup>[7,8]</sup>
- **Female**
- **Fertile:** one or more children

- **Forty:** age  $\geq 40$  years

There are three types of Gallstones<sup>[7,8,10-13]</sup>

1) Cholesterol (10%)

- $>50\%$  cholesterol contents; form with supersaturation of bile, nucleation and stone growth
- Predisposing factors
  - Diet, sedentary lifestyle, the rapid loss of weight, obesity, oral contraceptive pill, total parenteral nutrition (TPN)
  - ethnicity, genetic predisposition, older age, female sex

2) Mixed (80%)

- a. 20-50% cholesterol content
- b. Predisposing factor: similar to cholesterol stones

3) Pigment stones (10%)

- a.  $<20\%$  cholesterol content; high bilirubin content and occur when there is supersaturation of unconjugated bilirubin.
- b. Two further subtypes each with their own predisposing factors:
  - i. Black pigment stones: chronic hemolysis, liver cirrhosis, intestinal malabsorption (e.g. Crohn disease).
  - ii. Brown pigment stones: bacterial infection, parasitic infection (e.g. *Clonorchis sinensis*) and biliary stasis.

### Complications

- ☐ Biliary colic.
- ☐ Cholecystitis.
- ☐ Acute cholangitis
- ☐ Pancreatitis.
- ☐ Obstructive jaundice.
- ☐ Gallbladder empyema.
- ☐ Gallbladder hydrops/mucocele.
- ☐ Cholecystoduodenal fistula leading to a gallstone ileus or Bouveret syndrome.
- ☐ Mirizzi syndrome.
- ☐ Increased risk of cholangiocarcinoma.

Ultrasound is considered the gold standard for detecting gallstones<sup>[9]</sup>

- ☐ Greyscale ultrasound

- o highly reflective echogenic focus within gallbladder lumen, normally with prominent posterior acoustic shadowing regardless of pathological type (acoustic shadowing is independent of the composition and calcium content)<sup>[14]</sup>
- o gravity-dependant movement is often seen with a change of patient position (the rolling stone sign)
- Color doppler
- o may demonstrate a twinkling artifact and is particularly useful for identification of small stones
- Gallstone acoustic shadowing is prominent with
  - o larger size stones (usually >3 mm for shadowing)
  - o higher transducer frequency
  - o focal zone at the level of gallstone
- Gallbladder full of stones may paradoxically be hard to visualize (wall-echo-shadow sign)

## MATERIALS AND METHODS

### Rudhapata Kamala Causes and pathogenesis

Due to intake of dry, cold, heavy, sweet food items, holding the urges like urine and stools (vegavarodh) etc. leads to vitiation of *Vata* and *kapha*. So these *Vataprakopa* makes the *kapha* dry and thereby leading to the obstruction in *Pittavahini*. Due to these obstruction though the formation of *Pitta* is normal. It will not be able to reach the intestines and the colour of stools becomes whitish. Again the obstruction in *Pittavahini* causes the improper movement of *Pitta* producing the symptoms of indigestion, loss of appetite, burning sensation, thirst, debility of body.<sup>[15]</sup> *Kamala* has been classified as: *Koshthashrita Kamala* and *Shakhashrita Kamala*<sup>[16]</sup> In modern science jaundice is classified in three types:

1. Haemolytic (Due to Lysis of RBCS and Excess Bilirubin Production),
2. Obstructive (Obstruction to Common Bile Duct)
3. Hepatocellular (Damage to Liver tissues)<sup>[17]</sup>

In Ayurveda, in both type of *Kamala*, *Vikriti Pitta* play the role. In *Ruddhaphath Kamala* type the *Pitta* which has been vitiated does not reach the *Koshta*. So there is an underlying pathology of increased *Vatadosha* leading to *sakhagati* of *Pitta* along with an increased *kapha* stage creating a *Strotorodha*. Thus not letting the normal *Pitta* come back to *Koshta*.

Form this total *samprapti* we can infer that *Malaranjana* does not occur in *Ruddhaphath Kamala* (*Shakhashrit Kamala*) due to the absence of *Pitta* in *Koshta* thus, leading to

condition of '*Shvetavarcha*' and it is a partial obstruction it certainly result in *Tilapishanibhavarcha*.

***Samprapti of ruddhapath kamala(Shakhashrita kamala)***<sup>[18]</sup>

Nidana sevana



*Vata and Kapha Prakopa*



Vitiated *Vata and Kapha* circulate through the *Pittavaha Strotas*



*Avarodha* of *Pittavaha strotas* by the vitiated *Kapha*



*Margavrodha*( *Kaphsamurchito vayu*= Gall stone) of *Pitta* occurs at *Pittavahini*



*Pitta* does not come in *Koshtha*



*Shwetavarcha* or *Tilapishtha-nibha mala pravritti*



but due to Vitiated *Vata Dosha* it circulate in body.



*Pitta* begins to accumulate in liver and excessive *Pitta* get circulate through blood and causes yellow discolouration of eyes, skin, nails etc.

**Rupa of *Ruddhapath Kamala* (*Shakhashrita Kamala*)<sup>[19]</sup>**

1. Dark yellowish coloured eyes, mouth, skin & nails (*Haridra Netra Mutra Twak*)
2. White coloured stool (*Shwetavarcha*)
3. Constipation (*Avishtambha*)
4. Flatulence (*Aatop*)
5. Heaviness over heart region (*Guruna Hridayam*)
6. Debility (*Dourbalya*)
7. Suppression of the power of digestion (*Alpagni*)
8. Pain in the sides of the chest (*Parshwarti*)
9. Hiccough (*Hicca*)
10. Dyspnoea (*Shwas*)
11. Anorexia (*Aruchi*)
12. Fever (*Jwar*)

**DISSCUSSION**

*Kamala Vyadhi* is described by Ayurved Samhitas. Especially this is *Pitta* predominant disorder. *Pitta Dosha* and *Rakta Dushti* are pathological factors of *Kamala*. *Rakta* and *Pitta* are *Ashrayashrayi*, hence if there is any *Dushti* in *Ashraya* it will definitely hamper the normalcy of the *Ashrita Dhatu*. Acharya Chakrapani has used the term *Alpapitta Kamala* as the synonyms of *Shakhashrita Kamala*. *Kamala* is *Pittaja Nanatmaja Vyadhi*.<sup>[20]</sup> *Ruddhapath Kamala* (*Shakhashrita Kamala*) is produced when obstructed *Pittavaha Strotas* is vitiated with the aggravated *Kapha Dosha* due to which it vitiates *Vata Dosha* which results in *Pitta Vridhi* in *Shakha* (*Twacha, Rasa, Rakta* etc) and due to obstruction to bile, it does not come in *Koshtha* so *Shwet Varcha* (*Tilpishtnibha mal*) stool is observed. In obstructive jaundice, there is same mechanism in which the bile ducts are obstructed by gall stone or other causes and bile is accumulated in liver, resulting in elevation of conjugated bilirubine level in blood, it is responsible for yellowness of eye, skin, mucous membrane and stool becomes clay colored due to lack of bile (stercobillirubin) in the intestine.<sup>[21]</sup>

**CONCLUSION**

*Kamala* is a *Pittaja Nanatmaja Vyadhi* and *Raktapradoshaja Vyadhi*, where there is yellowish discoloration of skin, eye and mucous membrane. In modern science, Jaundice is considered as symptom of liver disorder whereas in Ayurveda, *Kamala* is taken as disease. Increased intake of oily, spicy, hot and alkaline food is depicted for aggravation of *Pitta*

*Dosha*. The aggravated *Pitta* is obstructed by *Kaphasamurcchito Vayu* (gall stone) then impairs the blood and the muscle tissue of the liver, causing blockage in the channels of the liver and thus *Pitta* is thrown back into the blood leading to discoloration of the eyes and skin. Liver excretes cholesterol, bile pigments, heavy metals, (like lead, arsenic and bismuth), toxins through bile. In *Ruddhapath Kamala*, the amount of *Pitta* vitiated will be Alpa. So, *Ruddhapath Kamala* can be Alpa *Pitta* because in this type of *Kamala*, there is obstruction to the *Marga* of *Pitta* due to *Avarodha* by *Kapha*. We can compare this phenomenon to the Obstructive Jaundice.

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