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A REVIEW ON AYURVEDIC ASPECT OF CHOLELITHIASIS

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ABSTRACT
The problems like obesity and metabolic syndrome are rising day by day which leads to an increase in diagnosis of cholelithiasis. It is more common in women than men. Formation of gallstones is due to supersaturation of bile with cholesterol. Gall bladder hypomotility is also the causative factor in formation of gallstones. Gallstones are generally asymptomatic which do not require treatment. But symptomatic cholelithiasis is characterized by biliary colic, nausea and vomiting. Treatment of cholelithiasis include surgical therapy and medical therapy. Life style changes, regular exercise and healthy diet may help to prevent gallstone formation. In ayurvedic samhita, Acharya has explained ashmari only in the context of Mutrashmari. The Pittashaya ashmari (gallstone) has not been described specifically. According to Ayurveda all the three, vata-pitta and kapha doshas contribute in the formation of gallstones. The vitiation of kapha is the primary cause in the formation of ashmari. We can correlate bile with achha pitta and gallstones can be considered as pittashaya ashmari. By considering similarities in location and function of bile and achha pitta, we can explain probable samrapti of pittashaya ashmari according to ayurveda. Ayurvedic management of pittashaya ashmari includes the kalpas having pachan, deepan and pittashaman properties and pathya ahar-vihar help to reduce its risk.

KEYWORDS: Pittashaya ashmari, Achha pitta, kapha, vayu, pitta dosha, Cholelithiasis or gallstones, Srotorodha.

INTRODUCTION
In current times, it is observed that there is a big impact of life style changes on health issues which leads to hyperacidity, indigestion, constipation, obesity, metabolic disorders, etc which contribute in the formation of gallstone. Anomalies of biliary tract are not uncommon. Gallstones are quite prevalent in most western countries. Gallstone formation increases after age 50. In the United States, the third National health and Nutrition Examination Survey has revealed an overall prevalence of gallstones of 7.9% in men and 26.7% in women that means more common in females than males. Gallstones are formed because of abnormal bile composition. Bile secreted by liver and stored in gall bladder, is essential for intestinal lipid digestion.

Two major types of gallstones
1) Cholesterol stones: Cholesterol stones account for more than 90% of all gallstones, which contains >50% cholesterol monohydrate plus admixture of calcium salts, bile pigments, Proteins and fatty acids.
2) Pigment stones: composed primarily of calcium bilirubinate and <20% cholesterol.[1]

In Ayurvedic classics, Acharyas explained Ashmari nidan(causes), types and chikitsa only in the context of mutrashmari. The cholelithiasis (gall bladder stones) has not been described specifically. But we know that bile is collected in gall bladder which can be co-related with 'achha pitta' as bile and 'pittashaya' as gall bladder, and the stones formed can be considered as 'pittashayashmari'. Hence, here we are discussing about the ayurvedic aspect of gallstone formation and its management according to ayurveda.

AIM AND OBJECTIVE
Aim: To review the ayurvedic aspect of cholelithiasis.
Objective: comprehensive review of literature on cholelithiasis and its ayurvedic aspect, collected from ayurvedic classics and articles and modern textbooks.

MATERIAL AND METHODS
Bile formed in hepatic lobules is secreted in common hepatic duct which is joined by cystic duct of the gall bladder to form Common bile duct (CBD), which enters the duodenum through the ampulla of Vater.
Bile is synthesized in liver, stored in gallbladder and secreted in duodenum. Total daily basal secretion of hepatic bile is ~500-600ml. It breaks down fats into fatty acids.
Major solute components of bile by moles percent include bile acids (80%), lecithin and traces of other

phospholipids (16%), and unesterified cholesterol(4.0%).[2]

If there is an excess of cholesterol in relation to phospholipids and bile salts, cholesterol crystals get precipitated.

Predisposing Factors for cholesterol gallstones and pigment gallstones.

Cholesterol stones	Pigment stones
1. Genetic factors	1. Genetic factors
2. Obesity/metabolic syndrome	2. Chronic hemolysis
3. Female sex hormone: Oestrogen	3. Alcoholic liver cirrhosis
4. Pregnancy	4. Pernicious Anaemia
5. Increasing age	5. Increasing age
6. Gallbladder hypomotility	6. Chronic billiary tract infection
7. Decreased bile acid secretion	7. Cystic fibrosis
8. Decreased phopho –lipid secretion	8. Ileal disease
9. Miscellaneous: A. High calorie, high fat diet. B. Spinal cord injury	

Clinical presentation of Cholelithiasis

Gallstones are generally diagnosed asymptomatic. In symptomatic cholelithiasis, characteristics can range from mild nausea or abdominal discomfort to biliary colic and jaundice.

Biliary colic – Sharp, postprandial epigastric or right upper quadrant pain and lasts for several minutes to several hours. Pain often radiates to right scapula or the right shoulder. It may be accompanied by nausea and vomiting.

Physical examination – Upper right quadrant tenderness and palpable infiltrate in the region of gallbladder is noted.

Treatment of Cholelithiasis

Asymptomatic cholelithiasis do not require treatment.

Treatment of symptomatic cholelithiasis

1. Surgical Therapy – currently, Laparoscopic cholecystectomy is the choice of treatment.
2. Medical Therapy-

Gallstone dissolution: In patients with functional gallbladder and with radiolucent stones <10mm in diameter, complete dissolution can be achieved in ~50% of patients within 6 months to 2 years.

Dose of UDCA (Ursodeoxycholic Acid) should be 10-15mg/kg per day.

3. Prevention – Lifestyle changes, healthy diet and regular exercise may help to prevent gallstone formation.[3]

Ayurvedic aspect

In ayurved samhita, Pitta sthana is described between Nabhi and hridaya.[4]

Acharya Sushruta has explained Pittashaya (gall bladder) as one of the sapta Ashayas.[5]

In grahani adhyaya, acharya charak has explained the concept of Avasthapaka (Stages of digestion). Three avasthapakas are explained -1. (Prathama) Madhura avasthapak,

2. (Dwitiya) Amla avasthapak and
3. (tritiya) Katu avasthapak.

'Achha pitta': It is generated in second stage of digestion i,e amla avasthapak. It helps in digestion of food (pachan karma) in grahani.[6] The mala and mutra gets prakrut varna by the Ranjak pitta which can be correlated with modern science.

According to modern science, bile is synthesized in liver and secreted in duodenum which helps for digestion. Two main pigments of bile are bilirubin and biliverdin which are responsible for the brown color of feces.

Hence Achha pittta can be correlated with bile.

After ingestion of food, it immediately undergoes the stage of preliminary digestion. In the first stage of digestion, food becomes madhura and there is a surge in the formation of kapha dosha. Ultimately, if a person has *Agnimand*ya and consumes more *Kaphaprakopak Ahara*, then in the first stage, there will be abnormal consistency of kapha, which can be regarded as *Aam/sama Kapha* (abnormal Kapha). This *Aam Kapha*, developed in first *Awasthapak*, mixes with the *Ahararas*a and circulates throughout the body with the help of *Vyana Vayu* which causes srotorodha (obstruction) in pittashaya which contribute in the formation of pittashaya ashmari.

In Madhav Nidan eight types of Shula roga are mentioned, among them Pittaj shula resembles the sign and symptoms of biliary colic.

Pathogenesis (samprapti) of cholelithiasis

Acharya sushruta has explained that if a sanshodhansheel person (who needs purification) does not undergo sanshodhan and consumes unhealthy (kapha-dushtikara) foods and activities (Apathya ahara-vihara) regularly, *Kapha* gets vitiated which causes formation of Ashmari.[7]

Nidan/ Hetu (causative factors) of Pittashaya ashmari can be considered as-

Kaphaprakopak nidana
Ahara - Snigdha, Madhura, Picchila, Guru ahara, Dadhi, Ghrita, Mamsa, Pishta, tila vikriti sevana, Abhishyandi ahara sevana, Adhyashana, Samashana.
Vihara – Diwaswapna, Avyayama.

Pittaprakopak Nidana
Vidahi, Katu, Amla, Lavana, ahara sevana, Tila sevana.

According to Ayurvedic aspect,
Kaphaprakopak along with pittaprakopak nidan sevan
↓
Due to agnimandya, abnormal kapha (Sama kapha) is formed in First stage of digestion
↓
This Sama kapha mixes with ahararasa and circulates throughout body
↓
Sama Kapha and pitta mix together in pittashaya (according to modern science, cholesterol and bile salts in bile)
↓
Srotorodha (Formation of viscous material- billiary sludge)
↓
Obstruction in passage of Vayu.
↓
Hence, Vayu gets vitiated and provocated which leads to Sransa (functional lethargy of gall bladder), vyasa (Dilatation of Gall bladder) sanga(obstruction).
↓
Residual volume increases.
↓
Hence, due to obstruction, vayu gets provocated by its Rukshadi gunas and it converts the viscous material into dry (shushka) and solid form called as 'Pittashaya ashmari'

Ayurvedic management of cholelithiasis
There is very small and scattered reference of pittashaya ashmari in Ayurvedic samhitas.
In the ayurvedic management of Gallstones, the drugs having properties like pachan, deepan, snigdha and pittashamana can be included. Narikel lavana is described in Rasatarangini, Sharangdhar samhita, Bhaishajya ratnavali. It is indicated in amlapitta, Parinama shula and pitta shoshaj shula. In pittashaya ashmari, due to srotorodha, Rukshadi guna of vitiated and provocated vayu converts viscous material to dry and solid form which can be taken as pitta shosha. Hence, in pitta shoshaj shula, Narikel lavana can be indicated as it is sheeeta, snigdha and pittashamak.

Prevention – Following the pathya ahara and vihara and regular exercise may help to reduce the risk of gallstone formation.

CONCLUSION

Cholelithiasis (gallstones) may present with or without any obvious symptoms. According to ayurveda, hetu sevana such as lack of exercise, irregular sleeping patterns, guru-snigdha-vidahi ahara sevana results in Kapha-pitta dushti, agnimandya, Srotorodha and ultimately problems like gallstones arise. Achha pitta generated in second stage of digestion is very much similar to bile which is stored in gall bladder. Due to Margavarodha, provocated and vitiated vayu forms stones in gall bladder. In ayurveda, billiary colic can be correlated with pittaj shoola or pitta shoshaj shoola. Ayurvedic treatment includes pachana, deepana and pittashamana kalpas and changes in lifestyle help in prevention of gallstones formation.

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