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A CRITICAL REVIEW OF LITERARURE OF UTTPATTI OF UNDUKA AND UNDUK PUCCHSHOTHA WITH SPECIAL REFERENCE TO APPENDICITIS

[1]*Dr. Sunil M. Kajikar and [2]Dr. Rupali Chaudhari

[1]Associate Professor in the Department of Rachana Sharir At Matoshri Ayurved College, Dhanore.

[2]Professor in the Department of Kriya Sharir At Matoshri Ayurved College, Dhanore.

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***Corresponding Author**
Dr. Sunil M. Kajikar
Associate Professor in the Department of Rachana Sharir At Matoshri Ayurved College, Dhanore.

INTRODUCTION

Ayurveda has it's own view to understand the development of human body and it's various organs. *Acharya Sushruta* explains development of various organs in *sharir sthana*. Among these he explains *utpatti* of *'unduka'* in *sharir sthana adhyaya* four. In this *adhyaya*, *utpatti* of various important organs like heart, lungs, liver are described effectively. Here *utpatti* of *unduka* is also mentioned by *Acharya Sushruta* i.e.-

शोणितकिट्ट प्रभवः उण्डुकः ।

….. सु. शा ४ / २५

It means that *Unduka* develops from *'shonit kitta'*. As we compare development of Liver according to Ayurveda. Acharya's have opined about the genesis of '*Yakruta'* (Liver) from *Rakta Dhatu* (blood tissue). Parallel opinion in conventional anatomy states that abundant quantity of blood is responsible for the formation of sinusoids of liver. But it is not similar in case of *unduka*. Because according to modern embryology Caecum is formed from caecal bud arising from the post-arterial segment of midgut loop. And it cannot be correlated with *shonit -kitta* concept of Ayurveda.

So to study *utpatti* of Unduka – understanding the concept of *shonit kitta* is a very necessary thing.

The word *shonit* means blood. Now, two concepts of Ayurveda arises in mind about *Shonit-kitta-*

1) किट्ट: रक्तधातो: मलः पित्तम् ।
आयुर्वेदीय - शब्द्कोशः ।

If we consider the word *kitta*, it means *'Mala'*. Then *shonit kitta* means *pitta*. It means *unduka i*s formed from *pitta.*

2) किट्ट : असारभाग: ।

……. आयुर्वेदीय - शब्द्कोशः ।

If we consider *Asarbhag* as a degradation product of blood, composition and fate of blood cells should be studied in detail.

Blood is basically red colored liquid which circulates in our body. Blood is connective tissue, consist of four things namely Plasma, Red blood corpuscles, white blood corpuscles and platelets. The organ '*unduka'* is compared to caecum by modern science and *undukapuchchha* with appendix.

The vermiform appendix is considered by most to be a vestigial organs, it's importance in surgery results only from its propensity for inflammation, which results in the clinical syndrome known as acute appendicitis. Appendicitis is one of the commonest cause of acute abdomen encountered in surgical practice.

CONCEPTUAL REVIEW

A) What is *Unduka* ?

उण्डुकः पोट्टलक इति लोके ।

…….. सु.चि. २ डल्हण टिका

It is pouch like structure situated at Large Intestine i. e. Caecum.

B) Embryological Formation of *Unduka*

शोणितकिट्ट प्रभवः उण्डुकः ।

……. सु. शा ४ / २५

Unduka is formed by '*Shonit Kitta* '.

C) Location of *Unduka*

पित्ताशयात् अधः पक्वाशयः ।

तस्य एकदेशे च विभक्त मलाधार उण्डु (न्दु) को विद्यते, अत उण्डु (न्दु) कात्
पक्वाशयो भिन्न इत्यर्थः ।

……. सु. शा. ५ / ७ डल्हण टीका

According to Charaka '*Purushadhar* 'means *Unduka*.
Pakvashaya i.e. Intestine is situated below the *Pittashaya* '. But again *Unduka* is different from *Pakvashaya.*

दीर्घमत्यन्त कुटिलमुत्तराधर खण्डवत् ।
तदन्ते दक्षभागेऽधः कुक्षावुण्डुकमास्थितम् ।

……. अष्टांग शारीरम् २

14 *Hastpraman* which means 18 inches is length of small intestine. Small intestine is coiled part. It's proximal part known as jejunum and distal part known as ileum. *Unduka* (caecum) is situated at the end of ileum in Right hypogastric region. (दक्षभागेऽधः)

D) सप्त कोष्ठांगामध्ये समावेश

तेषु सप्तसु प्रतिबध्दानि कोष्ठाङ्गानि हृद्य यकृत प्लीह फुफ्फुसोण्डुक वृक्कान्त्रादीनि ॥

…. अ. सं. शा ५ / ६३

According to *'Ashtang Sangraha'* - Heart, Liver, Spleen, Lungs, Caecum, Kidneys, Intestine included in concept of *Koshtanga*.

E) Kala related to *Unduka*

पञ्चमी पुरीषधरा नाम , सा हयन्त्रामपक्वाशयाश्रिता कोष्ठान्तरुण्डुकस्थं मलं विभजते ।

…. अ. सं. शा. ५ / २७१

पञ्चमी पुरीषधरा नाम ; या अन्तः कोष्ठे मलमभिविभजते पक्वाशयस्था ।

सु. शा. ४ / १५

भवति चात्र -

यकृत समन्तात् कोष्ठं च तथाऽन्त्राणि समाश्रिता ।

उण्डुकस्थं विभजते मलं मलधरा कला ॥

…. सु. शा. ४ / १६

Caecum *'Kala'* which is separated Water from Fecal matter known as *'Purishadhara Kala'*. This kala situated near the Liver and intestinal part of GIT, exactly situated at the Caecum.

Ayurvedic Literature Regarding to Unduka puchchha

There are very few and scattered information found in Ayurvedic Literature. In Ayurvedic Literature the word *'Upantra'* used rather than *Unduka puchchha.*

उपान्त्रं लंबते चाथोण्डुकात्स्थूलान्त्रमूर्ध्वगम् ।

ततस्तच्च तिरश्चीनमधोगं च क्रमाद्भवेत् ॥

अष्टांग शारीरम् २८

उण्डुकस्याधस्तादुपान्त्रमिति च किमपि प्रत्यङ्गं दृश्यते ।

बृहच्छरीरम् २ / ६

Appendix is attached to Caecum, distal to Caecum, Ascending colon, Transverse colon, Descending colon present respectively.

DISCUSSION

Appendicitis

There are four types of appendicitis

i) Acute appendicitis

ii) Subacute appendicitis

iii) Recurrent appendicitis

iv) Chronic appendicitis

ACUTE APPENDICITIS

Incidence

Acute appendicitis is the most common acute surgical condition of the abdomen. Acute appendicitis may occur at all ages, but is most commonly seen in the second and third decades of life. It must be noted that there is some relation between the amount of lymphoid tissue in the appendix and incidence of acute appendicitis. Both are pick in the middle of the second decade. In children, appendicitis is not common as the configuration of the appendix makes obstruction of the lumen unlikely. After middle age the risk of developing appendicitis in future is quite small.

There is hardly any difference of sex incidence but this condition seems to be more commonly seen in teenaged girls.

Aetiology and pathogenesis

1. OBSTRUCTION OF THE LUMEN seems to be the dominant factor in production of acute appendicitis. This may occur due to obstruction of the lumen, obstruction in the wall or obstruction from outside the wall.

a) In the lumen faecolith and hyperplasia of submucosal lymphoid follicle are the major causes of obstruction. Other causes are intestinal worms e.g. round worm, thread worm etc, vegetables, fruit seeds, inspissated faeces or barium from previous X-ray. A faecolith is composed of inspissated faecal material, epithelial debris, bacteria and calcium phosphates. Sometimes a foreign body may be incorporated into the mass. Presence of a faecolith is so important that it even provides an indication for prophylactic appendicectomy.

b) In the wall, stricture or neoplasms of which carcinoid is the commonest are the main causes.

c) Outside the wall adhesions and kinks are common in this group.

2. DIET

Diet plays an important part in producing appendicitis. Diet which is relatively rich with fish and meat.

3. SOCIAL STATUS

This disease has been considered to be the disease of aristocratic families.

- **SUBACUTE APPENDICITIS**

Some episodes of acute appendicitis apparently subside spontaneously before they reach the acute stage. This is called subacute appendicitis. This condition may recur. Presumably obstruction of the lumen due to lymphoid hypertrophy or soft faecolith may spontaneously be relieved allowing subsidence of appendicular inflammation and its attendant symptoms.

- **RECURRENT APPENDICITIS**

If a full-blown appendicitis dose not ensue, the appendix may turn into a 'grumbler' precipitating recurrent attacks. This is known as recurrent appendicitis. These attacks are usually milder. The patients remain symptom-free between attacks and physical examination

is normal. Barium enema X-ray often shows normal filling of the appendix due to disappearance of obstruction.

CHRONIC APPENDICITIS

Sometimes pathological examination of the appendix may reveal thickening and scarring suggesting old, healed acute inflammation. This is chronic appendicitis. Patients with such appendicitis often complain of persistent right lower abdominal pain. It must be remembered that the resected appendix must show fibrosis of the appendicular wall, evidence of old mucosal ulceration and scarring and infiltration by chronic inflammatory cells to be designated as chronic appendicitis.

Non obstructive acute appendicitis

This is a less dangerous condition. Inflammation commences in the mucous membrane or in the lymph follicles. Gradually inflammation spreads to the submucosa. The appendix becomes red and congested. The end artery, if involved in such inflammation, its lumen will be thrombosed and localized gangrene will appear. As there is no obstruction there is not much distension, but when the serosa is involved localized peritonitis develops and the patient complains of pain in the right iliac fossa. Such inflammation terminates either by i) suppuration ii) gangrene iii) fibrosis or iv) resolution. Many of the subacute appendicitis, recurrent and chronic appendicitis develop from this variety.

Sign and symptoms

Symptoms

i) Pain is present in all patients with appendicitis. The initial typical pain is diffuse and dull and is situated in the umbilical or lower epigastric region. Sometimes the pain is moderately severe. Intermittent cramping may superimpose on such a pain. Gradually the pain is localized in the right lower quadrant. It takes about 1 to 12 hours for such localization. In some patients the pain of appendicitis begins in the right lower quadrant and remains there. Variation in the anatomical position of the appendix will account for variation of the principal site of the pain. In case of retrocaecal appendix, pain may be complained of more in the flank. In case of pelvic appendicitis, pain may be referred to the suprapubic region. Malrotation of the appendix will lead to more confusion of the pain.

ii) anorexia- Nearly always anorexia is complained of in case of appendicitis. This symptom is so constant that the diagnosis should be questioned if the patient is not anorectic.

iii) nausea-Typically pain, vomiting and temperature constitutes Murphy's triad of this condition.

iv) The character of bowel function is of little diagnostic value. Many patients give history of constipation before the onset of abdominal pain. A few voluntarily submit that defaecation relieves their pain. To the contrary diarrhoea occurs in some patients, particularly in young children.

B) Physical signs

i) Temperature – Appendicitis may cause rise of temperature, but higher temperature is unusual with uncomplicated appendicitis. Temperature elevation is usually restricted to 99^0 or 100^0.

Normal temperature is often present even with advanced appendicitis. In case of generalized peritonitis following rupture of appendicitis temperature may shoot upto 40^0C.

ii) Pulse rate – The pulse rate is usually normal or slightly elevated. High pulse rate should question the diagnosis. Pulse rate increases in proportion with the temperature of the patient. In case of spreading peritonitis following rupture pulse rate may rise up to 100 per minute.

- **INSPECTION-** The patient looks anxious in pain and the tongue in dry. On careful inspection, in very acute condition, it may disclose some limitation of the respiratory movement of the lower half of the abdomen.
- **PALPATION-** Presence of peritoneal inflammation can be suspected if cough or percussion on the abdominal wall elicits pain. Systemic gentle palpation will detect an area of maximum tenderness that corresponds to the position of the appendix and is usually located in the right lower quadrant at or near McBurney's point. Muscle guarding or resistance to palpation roughly parallel to the severity of the inflammatory process.
- **Rovsing's sign-** Pain in the right lower quadrant is complained of when palpation pressure is exerted in the left lower quadrant. It is also called 'referred rebound tenderness' and when present is quite helpful in supporting the diagnosis. Retrograde displacement of the colonic gas strikes the base of inflamed appendix or displacement of the ilial loops to the right side of the abdomen to irritate the inflamed appendix is the probable explanation of this sign.
- **Psoas sign** - This test is performed by having the patient lie on his left side. The examiner then slowly extends the patient's right thigh, thus stretching the iliopsoas muscle. This will produce pain to make the sign positive. This indicates presence of irritative inflamed

appendix in close proximity to the psoas muscle. This is possible in retrocaecal appendicitis.

- **Obturator test** - Passive internal rotation of flexed right thigh with the patient in supine position will elicit pain. This positive obturator sign is diagnostic of pelvic appendicitis.
- **PERCUSSION** - Light percussion on McBurney's point will elicit pain.

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