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Understanding of *Vrikka Vidradhi* w.s.r. to Renal Abscess

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ABSTRACT

Acharya Sushruta and *Charaka*, described *Vrikka Vidradhi* under *Abhyantara Vidradhi, Vrikka Vidradhi* is also mentioned and reflect the symptom of *Parshva Sankocha*, and it can be correlated with Renal abscess. Renal Abscess is a collection of pus around kidney. Renal abscess is an uncommon disease caused by trauma and infection associated with kidney stone. Renal abscess is caused by infection with enteric gram-negative bacilli, *Staphylococcus aureus* is the etiologic agent in 90% of cortical abscess cases. Renal abscesses most commonly occur in individuals with diabetes mellitus with or without urinary tract obstruction. Common symptoms in patients with renal corticomedullary abscess include fever, chills, nausea / vomiting and flank or abdominal pain. Percutaneous drainage plus parenteral antibiotics is indicated as the initial treatment for abscesses 3-5cm in size. In cases that involve perirenal abscess or infected urinoma, also place a percutaneous perirenal drain. Hence an attempt is made to understand *Vrikka Vidhradi* in relation to renal abscess.

Key words: *Renal Abscess, Stapylococcus Aureus, Percutaneous Drainage, Vrikka Vidradhi.*

INTRODUCTION

Vidradhi[1] is a *Rakta Dushti Vikara* which undergoes rapid suppuration followed by *Pooya* formation. *Antarvidradhi*[2] is a *Vidradhi Bheda* which develops in relation with *Koshta*.

Ahitakara Nidana Sevana leads to *Dosha Prakopa* in the *Kostha* which takes *Sthanasamshya* in *Rakta Mamsa Dhatus* of different *Adhistana* that leads to *Shopha* and *Sheegra Vidahitwa,* then *Rakta* and *Mamsa* gets *Paka* where *Pooya Sanchaya* forming *Pakwa Shopha* and leads to *Vidradhi.*

Vrikka (Kidney) is derived from the root "*Vikkadane*" means to take. No direct reference of *Vrikka's* relation to urine formation is found in either of the Ayurvedic classics. *Vrikka* are two in numbers and are situated in the lumbar regions on either side in the posterior abdominal wall in Kostha.[3] *Vrikka* is also a maternal contribution derived from essence of *Rakta* and *Meda*.[4]

Sushruta has explained ten different sites[5] of *Antarvidradhi*, among that *Vrikka Vidradhi* is also mentioned and reflect the symptom of *Parshva Sankocha*, and it can be correlated with Renal abscess.

Renal and perirenal abscesses are uncommon disease entities resulting from infections in or around the kidneys. Further more, it is a diagnostic challenge for physicians. A delay in diagnosis may lead to higher morbidity and mortality.[6]

RENAL ABSCESS

Renal Abscess is a collection of pus around kidney.[7] Pus is formed following infection of soft tissue around

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kidney or infection of peripheral kidney tissue. Renal abscess is an uncommon disease caused by trauma and infection associated with kidney stone. Renal abscess is caused by infection with enteric gram-negative bacilli, Staphylococcus aureus is the etiologic agent in 90% of cortical abscess cases, often coupled with urinary tract abnormalities.

Although kidney and perinephric space infections are uncommon, they can cause significant morbidity and carry a risk of mortality.

Causes of Perinephric abscess[8]

It refers to the collection of pus in the perirenal area.

- Infection in a perirenal haematoma.
- Pyonephrosis when it ruptures.
- Tubercular perinephric abscess.

Pus from retrocaecal appendicitis can extend into loin, perinephric area and may present as abscess.

The predisposing factors for renal abscesses includes diabetes mellitus (DM),[9] renal calculi, ureteral obstruction, vesico ureteral reflux (VUR). Intravenous drug abuse (IVDA), chronic debilitating disease and immuno-compromised status are other less common causes.

Pathophysiology

Renal cortical abscess results from hematogenous spread of bacteria from a primary extra-renal focus of infection.[10] The source is not apparent in up to one third of cases at the time of diagnosis. In contrast, renal corticomedullary abscess develops as an ascending infection by organisms already isolated from the urine. Severe renal parenchymal involvement in combination with corticomedullary abscess is more likely to extend to the renal capsule and perforate, thus forming a perinephric abscess. Renal corticomedullary infections include the below acute and chronic infectious processes of the kidney. Cold perinephric abscess from tuberculosis may occur from tuberculous kidney or tuberculosis of a nearby vertebra.

Intrarenal abscesses develop within the renal capsule and the perirenal fascia of Gerota. Untreated and fulminant infections can rupture through the capsule and can involve the perinephric space and retroperitoneum. Because the kidneys are positioned retroperitoneally, 3 areas are of considerable importance when discussing infections in this area;

- Anterior perirenal space - Contains portions of the pancreas, intestine, and colon
- Perinephric space - Contains Gerota fascia and the adrenals
- Intrarenal space - Contains renal parenchymal tissue.

Spread of infection can adversely affect these vital structures. Once infection spreads to the perinephric spaces, percutaneous or open surgical drainage is required. Identifying and treating an intrarenal abscess before capsular invasion occurs can prevent perinephric and retroperitoneal spread of infection to avoid further complications.

CLINICAL FEATURES

Sympotoms[11]

1. Patients usually present with persistent pyrexia, chills and renal pain.
2. sympotoms of vesical irritability are almost unknown.
3. A few cases may give previous history of renal calculus.

Physical Signs

a. Extreme tenderness over the affected kidney is the main physical sign available.

b. The kidney may be palpable and tender, though adequate muscle spasm may stand in the way of better palpation.

Diagnosis of this condition depends entirely on the clinical examinations. Patient's back is inspected in sitting posture. Slight fullness may be detected just below the last rib and lateral to sacrospinalis muscle on comparing with the opposite side the abscess is

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often related to the upper pole where no swelling can be detected but less frequently such abscess may be related to the lower pole of the kidney when a swelling in the renal area can be seen. The patient is now instructed to lie prone on examining table while doing renal angle test muscular rigidity is felt on the affected side.

In straight X-ray psoas shadow is obscured, there may be reactionary scoliosis with concavity towards the abscess. The daiphragam is raised and immobile on the affected side. Definite diagnosis is made by CT and Ultrsonography.

Renal ultrasonography[12] is a rapid and relatively inexpensive initial screening tool for detecting parenchymal lesions and anatomic abnormalities.

The presence of an ill-defined renal mass with low-amplitude internal echoes and disruption of the corticomedullary junction is suggestive of an intrarenal abscess.

Computed tomography scanning is by far the study of choice in evaluating intrarenal abscesses and helps in characterizing infections as diffuse or focal, for detecting the presence of gas and to determine perinephric extension. Magnetic resonance imaging usually offers no additional information. Plain radiography may show radio-opaque stones in the case of calculus induced obstruction or intraparenchymal gas in patients with emphysematous pyelonephritis.

In the past, surgical debridement, drainage and nephrectomy were widely used to treat corticomedullary abscesses. With the advent of effective antibiotics along with percutaneous techniques, the open surgical approach is now reserved for only more severe, refractory cases.

Treatment

Acharya Sushruta practised *Bhedana Karma* and Siravyadha[13] in *Antarvidradhi* as emergency management in order to save the life of the patient which highlightens the importance of *Shalya Chikitsa* as *Pradhanatama*.

Samanya Chikitsa

- ***Apakwavastha*** - *Rakta Shodhana, Rakta Prasadana*
- ***Pakwavastha*** - *Bedhana, Shodhana* and *Ropana*

Samanya Chikitsa in *Apakwa Avastha*[14]

- *Varunadi Gana Aushadhas* with *Ushakadi Gana Churna* as *Kashaya Pana*
- *Virechana* with *Ghrita* preparation
- *Asthapana* and *Anuvasana*
- *Madhu Shigru* with suitable *Sahapana*
  - *Vatika - Dhanyamla*
  - *Paittika - Jala*
  - *Kaphaja - Gomutra*
- *Guggulu, Shilajatu, Shunti, Suradaru Prayoga.*

Samanya Chikitsa in *Pakvavastha*

- *Bhedana* or enhance the spontaneous *Visravana.*
- Intake of *Madhusigru* and *Varunadi Gana Aushadhas* with *Sahapanas* like *Maireya, Surasava, Amla Kanchika.*
- *Virechana* with *Trivruta ,Tilwaka Ghrita* daily in the morning.
- All the treatments should be followed by *Pathya Ahara Seva*

Successful treatment of renal abscess requires the use of approximate antibiotics along with percutaneous drainage. Early diagnosis and treatment of renal and perinephric abscess is important to prevent complications of septicemia or even death.

Percutaneous drainage is as effective as open surgery for large and medium renal abscesses. Small abscesses may be effectively treated with a course of intravenous antibiotic therapy.[15]

DISCUSSION

Renal cortical abscess results from hematogenous spread of bacteria from a primary extrarenal focus of infection. The source is not apparent in up to one third of cases at the time of diagnosis. *Antar Vidradhi*

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is a *Darunatara Roga* which needs an early diagnosis and early management.

Sushruta has explained ten different sites of *Antarvidradhi*, among that *Vrikka Vidradhi* is also mentioned and reflect the symptom of *Parshva Sankocha* and it can be correlated with Renal abscess.

Even though *Vrikka Vidradhi* is one among *Abhyanthara Vidradhi*, it can be managed with *Abhyanthara Chikitsa* along with the *Shastra Karma.* Immunity is highly related with the onset of *Antarvidradhi* in relation with abscess. So *Balyakara Ahara, Balya Vihara* and *Rasayana Aushadhis* can be adviced to the patients to get complete relief from such conditions and also to prevent the reoccurance.

Advanced technology for diagnosis of renal abscess like USG, X-ray, MRI, Complete Blood Count, Urine, Pus culture etc., are practiced. With the help of these tools diagnosis of *Vrikka Vidradhi* can be made precisely on evidence based on investigations which may be helpful to correlate with renal abscess.

CONCLUSION

Vrikka Vidradhi is a condition where in there is *Parshwa Prusta Kati Graha, Vedana, Jwara, Parshwa Sankocha, Pooya Mutrata* and *Rakta Mutrata* are the common *Lakshanas* seen in *Vrikka Vidradi. Antar Vidradhi* is a life threatening condition which needs *Chikitsa* in the *Apakwavatha* itself, so prevention is better than cure. Follow *Bala Vridhikara Bhavas*, try to hold on *Sadvritha* so that a healthy life is awaiting for all and also for the coming generation.

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