University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

SUSHRUTOKTA SURGICAL APPROACH IN ASCITES WSR TO MODERN PROCEDURE- A REVIEW

Idea Originator : JayotiVidyapeeth Women's University, Jaipur (Rajasthan) which is a Multi-disciplinary university providing different career opportunities.

Acknowledge to the Idea Originator: I am thankful to Hon'ble Founder and Advisor Sir, JV'n Dr. PanckajGarg, JayotiVidyapeeth Women's University, Jaipur (Rajasthan) for their kind cooperation and encouragement for the proposed study. The basic aim of this idea is to encourage and promote our ancient knowledge and use it in different fields of life.

Teacher Author:

Dr. Dharampal SinghThakur

Assistant Professor,

Faculty of Ayurvedic Science, Department of Rachna Sharir,

JayotiVidyapeeth Women`s University, Jaipur, Rajasthan

Email- dr.dharampalthakur@gmail.com

Contact No. - 7415883827

Abstract-

Sushrut Samhita is based on a systematic method for the dissection of the human cadaver. And their anatomical study related to traumatic view. Sushruta is considered to be the father of Indian surgery as well as the first plastic surgeon in the world. He is a pioneer of many surgical procedures. Manymodern surgical protocols found in Sushrutokta surgical approaches as well. An anatomical knowledge is must before surgery. Sushrut Samhita is based on surgery and he is also best in anatomy. Eight types of UdarRoga (Enlargement of Abdomen) have been described in the Sushrut Nidan Sthan 7thand their treatment is described in the Sushrut Citkita Sthan 14th. Among these Baddhagudodara (Intestinal Obstruction) and Parisravi Udar (Intestinal Perforation) are incurable. These are treatable with surgical therapies. In Baddhagudodar incision should be taken four angul apart from midline and remove obstruction & kept all intestines in abdomen as it is. In Parisravi Udarapplication of big black ants used for intestinal suturing. Sushrut also scientifically described about fluid removal process in case of Dakodar (Ascites). In Dakodar(Jalodar)vedhankarma is to be performed. The amount of fluids for tapping is so important which is also mentioned in Sushruta Samhita as well as Modern Medical science. Postoperativemanagement is a very important part of surgery because it will represent ofprocedural success.Maharshi Sushrut also mentioned very scientifically about post operative care as Paschatya Karm in every procedure. In these paper tries to correlate Sushrut surgical approach in above mentioned udar roga with modern surgical procedure.

Key Words:-UdarRoga, Dakodar, Jalodar, Ascities,

University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

Scope of Future Research- In this paper a theoretical concept is discussed in this will be helpful for practical approach research in Paracentesis procedure by Sushruta.

Research Outcomes for Industry & Corporate/Community & Society/ Government & Private/ Methodology and Policies:In thispaper discussed in Sushruta surgical procedure and modern procedure. This will be helpful for practical procedure in Paracentesis.

INTRODUCTION

Eight types of UdarRoga (Enlargement of Abdomen)have been described in Sushruta Nidan Sthan 7 and their treatments have been described in SushrutChikitsa Sthan Chapter 14. Among these Baddhagudodara and ParisraviUdar are incurable. These are treatable with surgical therapies. For Dakodar (Jalodar) removal of vitiating fluidsis also mentioned in Sushrut Samhita.Causative factor for udarrogas are poor digestive power, taking of rotten food.Usually all roga and especiallyudarroga is due to Aam and Mandagni. The essence of foot getting vitiated, comes out of the alimentary tract in little quantities through minute pores, it slowly accumulates under the skin of the abdomen and produces udar gradually.1

When the intestine becomes coated inside either with food or other materials faeces gets obstructed in the rectum. Then abdomen enlarges greatly in between heart and umbilicus it is to be understood as Baddhagudodar.2Bowel obstruction also known as intestinal obstructions is a mechanical or functional obstruction of the intestine which prevents the normal movement of the products of digestion. Either the small bowel or large bowel may be affected.3When foreign bodies mixed with food or which have entered separately into the intestine, cause punctures in the wall of intestines, the fluids resembling exudes from these holes and abdomen becomes enlarged, this disease called Parishravyudara.4Gastrointestinal perforation also known as ruptured bower is a hole in the wall of part of the gastrointestinal tract. 5When drinking oileation, oil enemas, emesis, and purgation enema if he drinks cold water immediately then abdomen resembles a bag filled with water both in movement and sound due to this is known as Dakodar (Jalodar, Udkodar) 6.Ascites is accumulation of fluid within the peritoneal cavity. Small amounts may be asymptomatic; increasing amounts cause abdominal distension and discomfort, anorexia, nausea, early satiety, heartburn, flank pain, and respiratory distress.7Both Maharshi Sushrut and Charak described about these three udarroga and their Medical and Surgical management. Both Maharshi`s Surgical management was very similar. In present day the abdominal disturbance is very common. Both Intestinal obstruction and perforation is an emergency condition and have to treat that as soon as possible. Maximum time they can go under operative management. In intestinal obstruction goal is to rule out obstruction cause earlier and go to surgical intervene and remove obstruction as well as. In case of perforation immediate go to laparotomy, find ruptured area, repairing and closed it. In Ascites it is not an emergency condition until the patient goes on the critical condition. Firstly diagnostic Paracentesis should be done, then

University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

treat the patient accordingly. If required therapeutic Paracentesis could be done. The quantity of removal fluids is important. If fluids, remove in a large amount patient can go on hypovolemic shock as well as PICD (Paracentesis Induced Circulatory Dysfunction). Maharshi Sushrut also described very well that all vitiated fluids should not be removed in a day it is done at intervals.

AIMS & OBJECTIVES-

To evaluate the concept of udararoga in Ayurved in the context of enlargement of abdomen.

A correlative study of udararoga with the different causes of pain, enlargement of abdomen in contemporary i.e. Modern medical science.

MATERIALS AND METHODS-

The information related to three udararoga, Baddhagudodar, Parisraviudar and Dakodar (Jalodar) surgical approach by Maharshi Sushruta as available in SushrutSamhia. With commentaries have been collected in this study. The basic concept of evolution of surgical procedure and management its varieties with clinical presentations of modern medical science have been critically analyzed in a hope to explain the Ayurvedic concept with scientific explanation.

LITERARY REVIEW-

Baddhagudodara Chikitsa- INTESTINAL OBSTRUCTION

In Baddhagudodara (abdominal enlargement due to Intestinal Obstruction) the patient be given oleation and sudation therapies first; his abdomen anointed and the abdomen is cut open by making an incision below the umbilicus, allowing a space of four angula (8cm) from the line of hairs (in the central line), the intestine is a pulled out (through the wound) examined (by cutting it open) for the presence of stone, hair, faeces or other material causing the obstruction and removed; then the intestine is anointed with honey and ghee and placed in its normal place (by pushing it inside) and the external wound of the abdomen sutured.8

ParisraviUdarChikitsa- INTESTINAL PERFORATION

In parisraviudara (Abdominal enlargement due to intestinal puncture) the salya (foreign body, causing the puncture) is removed in the same way as described above; the intestinal exudates cleaned (removed), the cut ends of the intestine are brought closer and got bitten by big black ants: after they have stuck up well, their (of ant) body should be cut off and removed but not their heads. Afterwards the abdomen should be sutured as described earlier and then the paste of black mud mixed with powder of yastimadhu should be applied on the abdomen as a plaster and then bandaged.Making using of big ants to hold the tissue is a novel method and a precedent of the use of the clips used now a day. A mixture of honey and ghee as a preventive against sepsis-has been recently proved. 9

University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

DakodarChikitsa- ASCITIS

The patient of Dakodar (ascitis) should be anointed with oils mitigating vata and given fomentation by hot water (pads or pouring on the abdomen); then he is made to sit (on a stool or cot of the height of the knee), held tight by his well wishers (relative or attendants) wrapped with bands of cloth from the axilla downward; next allowing a space of 4 angula (8cm) from the line of hair on the left side and below the umbilicus, the abdomen should be punctured with vrihimukhashastra (trocar) to a depth of thickness of the centre of the thumb and a tube (canula) made from trapu (tin) etc. Metalic tube or feather (of birds) having orifices at both ends is fixed to the instrument (trocar) and the vitiated fluid drained out. Afterward the tube (trocar and canula) is removed, the wound anointed with oil mixed with salt and bandaged.

All the vitiated fluid should not be removed in a day itself; if removed suddenly it may give rise to thirst, fever, body-aches, diarrhea, dyspnea, cough and burning sensation in the soles; or the abdomen may get filled again with more fluid even before the strength (of the abdomen) has been regained. Hence the removal of vitiated fluid should be done at intervals of three, four, five, six, eight, ten, twelve, sixteen or such other day and in little quantities. After the removal of the vitiated fluid, the abdomen should be bandaged tight using bands of wool, silk or leather so that air does not cause bloating of the abdomen. 10

DISCUSSION

In modern medical science Baddhagudodar correlate as Intestinal Obstruction, Parisraviudar as Intestinal Perforation and Dakodar (Jalodar) as Ascites. The modern surgical management and Sushrutokta Surgical approach will be discussed here.

In intestinal obstruction and perforation surgical intervention is required as soon as possible, for the benefit of the patient. Operative intervention is generally performed via midline incision. The goal of the operation is to identify and treat the origin of obstruction. Extensive adhesiolysis and bowel resection may be necessary. If adjacent bowel viability is questionable, a second-look operation within 24 to 48 hours may be required. Enteroenteric or enterocolic anastomosis can bypass an unrespectable obstructing lesion. Placement of a gastrostomy tube for postoperative decompression should be considered in select cases, such as carcinomatosis or unresectable obstructing cancer.11Midline the most common incision for laparotomy a vertical incision in the middle of the abdomen which follows the linea alba. The upper midline incision usually extends from the xiphoid process to the umbilicus. Midline incisions are particularly favored in diagnostic laparotomy, as they allow wide access to most of the abdominal cavity. If the site of obstruction is unknown, adequate exposure is best achieved by a midline incision. 12 In intestinal perforation after laparotomy repair of intestine perforation (in two layers) Expose the wounded portion of the intestine. Pull the gut transversely with stay sutures. Insert the first layer of invaginating sutures to include all layers of the

University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

gut wall. The second layer of serosa to serosa complete the repair. 13 After the surgical procedure stitching layer by layer, then closed abdomen with local applies of antibacterial ointment and tight bandage.

We can see many similarities are present in Sushrutokta and Modern Surgical procedure. Grossly laparotomy, find and remove obstruction, repair ruptured intestine, stitching, local ointment applying and lastly closing and tight bandaging are same. The little difference occurred on the site of incision. In modern surgical the incision site is mid line of the abdomen. But as per Sushrut the site is below umbilicus and four angula from the line of hairs. In hairy abdomen we can see both sites of hairs are coming across and forms line like structure, this is line of hairs which can consider as mid line of the abdomen. Four angula is measured as 8 cm. So 8 cm away from mid line is suggested it is paramedian line which runs parallel to the mid line. And it is below the umbilicus. The infraumblical midline incision may injury to the bladder. So at this point of view Sushrut advised for the incision site below the umbilicus but not on mid line but in paramedian line. This incision can be made and closed quickly and is particularly valuable in reopening the scar of the previous paramedian incision. 14 Sushrut had also used the black ants (Lasius Niger) during the suturing of intestinal perforation. It is probably the first reference of absorbent type of suture material. 15

Modern approach for Ascites, Peritoneal fluid tapping is called Paracentesis. Procedure of Paracentesis Technique- Patients should be in a supine position. The level of the ascites should be confirmed using ultrasound guidance to avoid visceral injury. Depending on the height of the ascites, a midline or lateral approach can be used. Care must be taken with the midline approach because an air-filled bowel tends to float on top of ascites. The lower quadrants are the most frequent sites for Paracentesis. The left lower quadrant is preferred because of the greater depth of ascites and the thinner abdominal wall16. A prospective study showed that the abdominal wall was thinner in the left lower quadrant, then in the midline and that the pool of fluid was deeper in the left lower quadrant. This has led to the left lower quadrant being the preferred site of entry. The skin at the site of entry should be prepped, draped, and anesthetized to the level of the peritoneum. For the midline approach, a needle is introduced at a point midway between the umbilicus and the pubic symphysis. For the lateral approach, the point of entry can be in the right or left lower quadrant in the area bounded by the lateral border of the rectus abdominis muscle, the line between the umbilicus and the anterior iliac spine, and the line between the anterior iliac spine and the pubic symphysis. A diagnostic tap consists of inserting a needle or needle/catheter combination into the peritoneal cavity and aspirating 20 to 30 ml of fluid. For a therapeutic Paracentesis, a needle fitted with a catheter, similar to that used for thoracentesis, allows for efficient drainage of larger volumes of ascites. With either approach, once ascites is withdrawn, the catheter is advanced over the needle and directed toward the pelvis. Patient will tense Ascites should have enough fluid removed to relieve the intra-abdominal pressure in order to make the patient comfortable. The removal of approximately 5 liters of fluid is

University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

enough to reduce the intra-abdominal pressure. If a large amount of fluid is removed, there is a small chance that blood pressure could drop to a low level. This could lead to shock. PICD (Paracentesis Induced Circulatory Dysfunction) usually occurs following large-volume Paracentesis >5 L and the result is faster reaccumulation of Ascites, hyponatremia, renal impairment and shorter survival. PICD was initially through to occur secondary to fluid shifting after Paracentesis, resulting in decreased circulating volume. Decreased systemic vascular resistance plays an essential role in PICD17. Large-volume paracentesis has been shown to decrease the incidence of postprocedure renal failure. 18

In Jalodar (Ascitis) vedhan karma, i.e. Tapping is to be performed. Vedhan is done in abdomen below & left lateral to umbilicus with the help of trocher&canula for removing some fluid18. The selection of site for fluid tapping is similar of Sushrut and Modern Surgery. Sushrut told below the umbilicus, left side 4 angula (8cm) from line of hair. We already discussed about line of hair. So the puncture point is left lower quadrant. The importance of quantity of removal fluids is also very well described by Sushrut. As per Sushrut it is clearly mentioned that do not remove all vitiated fluids in a day, it should be done at intervals. Modern Science also advised that 5 liter fluid removal is enough at a time. If removal volume is >5 L that can lead PICD and also faster reaccumulation of ascites.Sushrut already described that abdomen may get filled again with more fluids if all vitiated fluids removed suddenly. The complications are also mentioned that the patient may get a critical condition like hypovolemic shock. So we can see the scientific surgical approaches are already described by Maharshi Sushrut many years ago.

CONCLUSION

Maharshi Sushruta is a founder of Indian ancient surgery. He described about surgical procedure very well. In Baddhadudodar (Intestinal Obstruction) and ParisraviUdar (Intestinal Perforation) the procedure is very similar in Sushruta Samhita and Modern Medical Science. The site of incision as Sushrut is- below the umbilicus, allowing a space of four angula (8cm) from the line of hairs (in the central line), as per modern medical science this site is paramedian line. The line of hairs is as Mid Line. In case of Dakodar (Ascites) the site is 4 angula (8cm) from the line of hair (present in the midline of the abdomen) on the left side and below the umbilicus. And modern medical science suggests for Ascites tapping are is the left lower quadrant is preferred because of the greater depth of ascites and the thinner abdominal wall. Paramedian incisions through the rectus abdominis sheath structures have largely been abandoned in favor of midline or nonlongitudinal incisions. We can see Sushrut described the site of incision very well many years ago. This was also followed by modern surgeons. It was clearly mentioned by Sushrut that all vitiated fluids should not be removed in a day, if removed suddenly it may give rise to many complications. The removal of vitiated fluid should be done at intervals and in little quantities. Modern medical science also state that do not tapped large amount of fluids at a time it may lead PICD, Hypovolemic Shock and also fast reaccumulation of fluids. In this paper work we have seen how Maharshi Sushrut is described surgical approaches in Udarroga.

University Research Resource Journal
ISSN : 2581-3730
JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Volume 3, Issue 2: (April to June, 2020)

And also seen him is not only describing here, but also mentioned scientifically approaches, which is justified by modern medical science. So it is always said that "The Sushrut Is A Man of Surgery."

Integration &Correlation with Ancient Indian Literature: Sushruta Samhita is one of three Barihattarayees. It is based on surgical processes. Acharya Sushruta is Father of Surgery. He mentioned many surgical procedures. The approach of surgical procedure in Jalodar or Ascites suggested by Sushruta is very useful in practically.

REFRENCES-

1. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-1, ChaukhambhaOrientalia; Second Edition 2005; page no. NidanSthana 512, (Su/Ni-7/6)
2. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-1, ChaukhambhaOrientalia; Second Edition 2005; page no. NidanSthana 514, (Su/Ni-7/17-18)
3. WWW.Wikipedia.org
4. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-1, ChaukhambhaOrientalia; Second Edition 2005; page no. NidanSthana 514, (Su/Ni-7/19-20)
5. WWW.Wikipedia.org
6. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-1, ChaukhambhaOrientalia; Second Edition 2005; page no. NidanSthana 514, (Su/Ni-7/21-23)
7. Harrison`s Manual of Medicine; Kasper, Fauci, Hanser& Others; 19thEDT. 2016; Mc Grow Hill Education; New York, Chapter 59, page no. 287-288
8. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-2, ChaukhambhaOrientalia; Second Edition 2005; page no.ChikitsaSthana 147, (Su/Chi-14/16)
9. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-2, ChaukhambhaOrientalia; Second Edition 2005; page no.ChikitsaSthana 148, (Su/Chi-14/17)
10. Prof. K. R. Shrikantha Murthy, Illustrated Susruta Samhita, Vol-2, ChaukhambhaOrientalia; Second Edition 2005; page no.ChikitsaSthana 148-149, (Su/Chi-14/18)
11. The Washington manual of Surgery; 7th Edition; Mary E. Klingensmith; Wolters Kluwer; Washington university in St. Louis., page no. 1181, chapter 70
12. Bailey & Love`s, Short practice of surgery; 26th Edition; 2013; Edited by Norman`s Williams, Christopher J. K. Bulstrode, PAGE NO.Ronan O`Connell; CRC Press Taylor & Francis group, Newyork.
13. Dr. AmezeneTadesse, Dr. Mohammed Kedir, Dr. SahiluWondimu, Dr. Bernard Anderson, Dr. Solomon Yerdaw, Dr. ZekiAbdurahman, Dr. YonasGetachew, Dr. WorkenehAgegnhu University of Gondar, In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education 2007
14. Surgical Incisions—Their Anatomical Basis Part IV-Abdomen; Patnaik, V.V.G.; Singla, Rajan K.; Bansal V.K.; J Anat. Soc. India 50 (2) 170-178 (2001)
15. Surgical Procedure in Sushruta Samhita; Singh, R.K.; Vyas N.K.; IJRAP; 2011; 2 (5) 1444-1450; ISSN 2229-3566
16. Harrison`s Principal of Internal Medicine; Kasper, Fauci, Hanser& Others; 19thEDT. 2015; Mc Grow Hill Education; New York, Chapter 59, page no. 287-288
17. Aaron J. Lindsay, James Burton, Charles E. Ray, Paracenthsis-Induced Circulatory Dysfunction: a Primer for the Interventional Radiology; Seminar Intervent Radiology; 2014 Sep; 31 (3): 276-278.
18. Harrison`s Principal of Internal Medicine; Kasper, Fauci, Hanser& Others; 19thEDT. 2015; Mc Grow Hill Education; New York, Chapter 59, page no. 287-288
19. ShalyaTantra - The Ayurvedic Surgical Branch – A Literary Review; TukaramDudhamal Online; International Interdisciplinary Research Journal, Volume-IV, May 2014 Special Issue www.oiirj.org ISSN 2249-9598 Page 204