

## A Clinical Case Report On Anastomotic Leak

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### ABSTRACT

**Background:** One in 5000 live births results in anal atresia. The dreaded surgical complication known as an anastomotic leak can cause severe morbidity and mortality. An extremely hazardous side effect of intestinal surgery is anastomotic leakage.

**Case presentation** the author presented a known case of a 1 yr. The female child came to the hospital with the mother with a chief complaint of No anal opening at birth, anal atresia and colostomy done, and an Anastomotic leak. After that, all routine investigations were carried out such as history taken, physical examination, blood test, urine test that was normal. USG and noted anal atresia after that doctor diagnosed anal atresia and Anastomotic leak. Biopsy was done and findings are Received segment of the colon measuring 8 cm in length. One end is constricted, on the cut, section shows thickened wall, greyish white, measuring 1 cm in length. Another end appears dilated. The rest of the mucosa appears normal. Received separate colonic tissue pieces measuring 10 cm in circumference. Sections from constricted end show unremarkable mucosa, submucosa, and muscular with congested blood vessels, at places mucosa shows superficial erosion, submucosa shows prominent lymphoid hyperplasia (Reactive) on histopathology. Section from resected nodes from colonic specimen shows reactive follicular hyperplasia with sinus histiocytosis (Reactive Lymphadenitis) on histopathology. The patient received all pre-operative and post-operative interventions. Emergency exploratory laparotomy was done for an Anastomotic leak. Under all aseptic precautions, parts were prepared, painted, and draped. The patient had Fever, abdominal pain on the surgical site, and swelling also presented. The daily dressing was done to prevent infection. According to symptomatic treatment was provided to a client such as antipyretic Inj. Paracetamol, antibiotic injectable. Ceftriaxone, analgesic ibuprofen, and intravenous therapy are also administered for maintaining electrolytic balance. The patient's general condition was poor.

**KEYWORDS:** Imperforate Anus, Anal Atresia, Colostomy, Anastomotic Leak, Mortality, Laparotomy

### INTRODUCTION:

A natural anal aperture is lacking at birth in the case of imperforate anus, also known as anal atresia. <sup>1</sup> arm span a wide range of abnormalities, from simple to complicated cloacal malformations that affect the urinary and

vaginal tracts as well (for example, membrane covering).<sup>2</sup> The prognosis can therefore be very different. The external anal sphincter, nerves, and pelvic muscles frequently exhibit maldevelopment in ARMs. Anomalies in additional organ systems are present in about half of people with ARM. The genitourinary and musculoskeletal systems are most frequently involved in these. Despite standard postpartum examination, one out of every five neonates may experience a delayed diagnosis. A delay like that could lead to more morbidity and mortality.<sup>3</sup>

An anastomotic leak is One of the most dangerous side effects of colorectal surgery and remains anastomotic leakage (AL). The incidence is estimated to be between 2.8 and 8.4 percent across the board<sup>1,2</sup>, with rectal anastomosis accounting for 75 percent of cases, leading to a mortality rate of between 1.7 and 16.4 percent<sup>1,3</sup>. Therefore, it is crucial for treating this condition to comprehend its nature and treatment.<sup>4</sup> The dreaded surgical complication known as an anastomotic leak can cause severe morbidity and mortality. Anastomotic leaks are common, but there is no agreement on how to handle them.<sup>5</sup> potential complications of this procedure. It happens when the two connected ends of a channel don't entirely close, allowing contents from the inside to leak out. It is a significant issue since the channels in our bodies are designed to carry information that has no business being there. For instance, germs in the gastrointestinal tract have the potential to infect the abdominal cavity if they leak out.<sup>6</sup> The likelihood is that it will occur at some point during the day. One procedure that demands anastomosis and anastomotic leakage is bowel resection. Nevertheless, it is the most often used. The tissue lining the abdominal cavity, the peritoneum, may become infected and irritated as a result of bowel leaks (peritonitis). A stomach infection has the potential to spread to other abdominal organs through the bloodstream. A significant infection may lead to sepsis, a physically lethal reaction that can result in shock, organ failure, or death.<sup>7</sup>

Even though the healing process allows for the possibility of leaks, a leak may already be present when surgery is performed. The majority of leaks appear within the first week following surgery, while some may appear later. In the days and weeks following surgery, healthcare professionals look out for leaks. It might take longer for smaller, slower leaks to manifest their impact. Less frequently, an anastomotic leak occurs more than 30 days later.<sup>8</sup> Colectomy, the removal of a portion of the colon, is related to anastomotic leakage in about 75% of cases. They occur most frequently when the big bowel resection is at the end of the organ. Particularly in men, this area is more technically challenging to operate on since it is narrower.<sup>9</sup> An anastomotic leak is a potential problem for anyone who has undergone an anastomosis procedure. But several risk factors seem to make having one more likely. Smoking, anemia or malnutrition, immunosuppressive medications, low-level tumors, radiation therapy, active sepsis or septic shock, intraoperative blood transfusion, obesity or diabetes mellitus, emergency surgery, lengthy recovery periods, rectal anastomosis, and male sex are risk factors.<sup>10</sup>

Anastomotic leaks can be caused by several different things; there is no single direct cause. For instance: At the surgical connection, there is too much strain. infection already presents in the bodily cavity. Ischemia, or reduced blood flow, is present in the connecting bodily channel. compromised immunity as a result of a medical condition, smoking, poor nutrition, or immunosuppressant usage. Additionally, radiation therapy weakens immunity and harms tissues.<sup>11</sup> Abdominal pain, headaches, and fatigue are the most typical signs of an anastomotic leak. Fever, persistent paralytic ileus, abdominal edema (caused by peritonitis).<sup>12</sup> Imaging studies are used to explore, typically a CT scan with contrast dye to diagnose an anastomotic leak.<sup>13</sup>

Antibiotics were administered very away to suppress the infection. The course of treatment will depend on the size of the leak and the severity of the Drainage issue. The body may need to have contaminated fluid and/or swelling from inflammation drained. If at all possible, the medical professional will carry out this procedure via the skin using a hollow needle. Stomach rest During treatment, mouth-to-mouth hydration and eating must be avoided if the intestinal leak is present. A medical professional will administer intravenous fluids and, if necessary, feeds.<sup>14</sup>

## CASE PRESENTATION

The author discussed a 1-year-old known example. Anal atresia, colostomy, and anastomotic leak were the main complaints of the mother and daughter who were admitted to the hospital. Following that, all regular inquiry was done, including taking a history. Physical examination of the head to foot was done and blood tests, and urine tests were normal. After the doctor identified anal atresia and anastomotic leak, the USG revealed anal atresia, performed a biopsy and discovered a colonic section, 8 cm in length, received. A sliced part of the constricted end's wall, which is greyish white in hue and 1 cm long, reveals a thicker wall. Another end seems to be enlarged. The rest of the mucosa seems healthy. received individual, 10 cm-diameter pieces of colonic tissue. On histology, sections from the constricted end display unremarkable mucosa, submucosa, and muscular with clogged blood vessels, superficial erosion in certain spots, and significant lymphoid hyperplasia (Reactive). A histopathology section of the colonic specimen's resected nodes reveals reactive follicular hyperplasia with sinus histiocytosis (Reactive Lymphadenitis). All preoperative and postoperative interventions were given to the patient. For an anastomotic leak, an urgent exploratory laparotomy was performed. Parts were prepared, painted, and draped while following all aseptic precautions. The colostomy site moved, and the medial incision was

lengthened. Transverse colon mobilized and adhesions are broken until hepatic flexure. Both the ascending portion and the hepatic flexure of the colon are dilated. As a result, the ectopic colon was removed, the oblique anastomosis with interrupted sutures (3-0), the closure of the mesenteric defect, and the confirmation of hemostasis. A 20-finger drain was placed in the abdomen, and the incision was closed with vinyl 2-0 interrupted sutures for the muscles of the abdominal wall and 3-0 ethion for the skin. The customer had Additionally present fever, edema, and stomach pain on the operative side. To avoid infection, the dressing was done daily. Treatment was given to the client following their symptoms, including antibiotic and antipyretic injections of Paracetamol. For continued electrolytic balance, Ceftriaxone, the painkiller ibuprofen, and intravenous treatment are also used. the general patient condition was poor.

#### **DISCUSSION:**

Rectal atresia is a rare combination of a usually developed anus and an atretic rectal area, and it makes up 1% to 2% of all anorectal abnormalities. Rectal atresia is regarded to be different from the imperforate anus or anal atresia since the anus is present and normal but a variable rectal segment is atretic. Uncompleted rectal atresia might manifest as either full membrane or severe stenosis. The pathophysiology of this rectal deformity appears to be explained by an ischemia event that occurred in utero. Rectal atresia is a rare anorectal aberration that combines an atretic rectal segment with a typically formed anus. Failure to pass meconium in newborns may indicate an intestinal blockage. The rectum with its proximal blinded pouch and atretic section are visible after a barium enema.<sup>15-26</sup> The distal anus and rectum, as well as the urinary and genital tracts, are frequently affected by a complex group of congenital disorders known as anorectal malformations (ARMs). The majority of ARMs are caused by the anorectal septum, which develops abnormally early in childhood. When the anus is not perforated, the distal intestine component typically terminates blindly (atresia) or as a fistula into the perineum, genital tract, or urinary system. ARMs are also present in a great number of syndromes and associations of congenital anomalies.<sup>27-31</sup> The classification of ARMs is mainly based on the position of the rectal pouch relative to the puborectalis sling, the presence or absence of fistulas, and the types and locations of the fistulas. All of this information is crucial in determining the most appropriate surgical approach for each case. Imaging studies play a key role in the evaluation and classification of ARMs. In neonates, clinical and radiologic examinations in the first 3 days of life help determine the type of ARM and the need for early colostomy. In older children, preoperative pelvic magnetic resonance imaging is the most efficient diagnostic method for evaluating the size, morphology, and grade of development of the sphincteric musculature.<sup>31-38</sup>

When considering an embryological explanation for the aforementioned problem, it becomes clear that atresia of the colon coexists with a deficiency in the cloacal septation process, which occurs between the fifth and eighth embryonic weeks. Re-examining the literature reveals that many alternative hypotheses have been advanced on the origin of colon atresia, including failure of full recanalization after partial lumen occlusion by epithelial growth.<sup>39-41</sup>

#### **CONCLUSION**

Leaks that are discovered may typically be fixed, but managing infections and avoiding sepsis depends on early detection and management. In general, those who experience anastomotic leaks are more susceptible to future health issues and mortality (death). It's unclear how frequently these consequences are brought on by the anastomotic leak or whether the leak is a sign of poor health in general.

#### **COMPETING INTERESTS**

The author declared there is no competing interests exist.

#### **FINANCIAL RESOURCE OF THE STUDY: Self**

#### **CONSENT**

As per international standards or university standards, patient written consent had been taken.

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