

Nursing process applied to patients with postoperative infection after colectomy and nephroureterectomy*Proceso de enfermería aplicado a pacientes con infección postoperatoria tras colectomía y nefroureterectomía**Processo de enfermagem aplicado a paciente com infecção operatória pós colectomia e nefroureterectomia***Mayara Spin¹**

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Como citar este artigo:

Spin M, Cassola EG, Mizobata V, Silveira RRP, Sardeli KM, Oliveira BC, Nascimento AC, Felipe T, Castro MCN, Cyrino CMS. Nursing process applied to patients with postoperative infection after colectomy and nephroureterectomy. *Glob Acad Nurs.* 2021;2(2):e141. <https://dx.doi.org/10.5935/2675-5602.20200141>

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Chief Editor: Caroliny dos Santos
Guimarães da Fonseca
Executive Editor: Kátia dos Santos
Armada de Oliveira

Submission: 02-07-2021

Approval: 03-01-2021

Abstract

In this experience report, the aim was to demonstrate the importance of systematizing nursing care, either in the practical aspect, through interventions, in the theoretical-scientific aspect that underlies our entire scientific structure of the profession, as well as in the search and organization of information about the patient, who presented a picture of dehiscence and infection in the surgical wound after undergoing colectomy and right nephroureterectomy, resulting from Intestinal Ulcerative Colitis and ureter transitional cell carcinoma, respectively, thus being able to observe and monitor its evolution. It was carried out during the practical activity of the Clinical and Surgical Adult and Elderly Health discipline of the Undergraduate Nursing Course. A data collection instrument developed by the discipline was used, in addition to interviews with the patient, research in the patient's electronic medical record and the steps of the nursing process, consisting of history and physical examination, diagnosis, prescription and nursing evolution adapted to the diagnoses of nursing according to the North American Nursing Diagnosis Association taxonomy. Conducting the study provided an opportunity to apply and expand all the knowledge acquired throughout the course through the Nursing Process.

Descriptors: Nursing Care; Nursing Process; Case Reports.

Resumen

En este relato de experiencia, el objetivo fue demostrar la importancia de sistematizar el cuidado de enfermería, ya sea en el aspecto práctico, a través de intervenciones, en el aspecto teórico-científico que sustenta toda nuestra estructura científica de la profesión, así como en la búsqueda y organización de información sobre el paciente, quien presentó un cuadro de dehiscencia e infección en la herida quirúrgica luego de ser sometido a colectomía y nefroureterectomía derecha, resultado de Colitis Ulcerosa Intestinal y carcinoma de células transicionales de uréter, respectivamente, pudiendo así observar y monitorear su evolución. Se llevó a cabo durante la actividad práctica de la disciplina Clínica y Quirúrgica de Salud del Adulto y del Anciano del Curso de Licenciatura en Enfermería. Se utilizó un instrumento de recolección de datos desarrollado por la disciplina, además de las entrevistas con el paciente, la investigación en la historia clínica electrónica del paciente y los pasos del proceso de enfermería, consistente en historia y exploración física, diagnóstico, prescripción y evolución de enfermería adaptada a la diagnósticos de enfermería según la taxonomía de la North American Nursing Diagnosis Association. La realización del estudio brindó la oportunidad de aplicar y ampliar todos los conocimientos adquiridos a lo largo del curso a través del Proceso de Enfermería.

Descriptores: Cuidado de Enfermería; Proceso de Enfermería; Reportes del Caso.

Resumo

Neste relato de experiência, objetivou-se demonstrar a importância da sistematização da assistência de enfermagem, seja no aspecto prático, por meio das intervenções, no aspecto teórico-científico que fundamenta toda a nossa estrutura científica da profissão, quanto na busca e organização de informações sobre o paciente, que apresentava um quadro de deiscência e infecção em ferida operatória após ser submetido a uma colectomia e nefroureterectomia direita, decorrente de Retocolite Ulcerativa Intestinal e carcinoma de células transicionais de ureter, respectivamente, podendo assim, observar e acompanhar a evolução deste. Foi realizado durante a atividade prática da disciplina de Saúde do Adulto e Idoso Clínico e Cirúrgico do curso de Graduação em Enfermagem. Utilizou-se instrumento de coleta de dados elaborado pela disciplina, além de entrevistas com o paciente, pesquisa no prontuário eletrônico do paciente e as etapas do processo de enfermagem composto por histórico e exame físico, diagnóstico, prescrição e evolução de enfermagem adaptado aos diagnósticos de enfermagem conforme a taxonomia *North American Nursing Diagnosis Association*. A realização do estudo proporcionou uma oportunidade de aplicar e ampliar todos os conhecimentos adquiridos ao longo do curso por meio do Processo de Enfermagem.

Descritores: Cuidados de Enfermagem; Processo de Enfermagem; Relatos de Casos.



Introduction

The Nursing Process is a methodological instrument that nurses use to assist the patient, guiding care and allowing the recording of actions. The systematized process of nursing care was based on Wanda Horta's theory¹, aiming at comprehensive care for human beings, it consists of five interrelated stages: Nursing history or data collection, Nursing diagnosis, Nursing planning, Nursing implementation and evaluation.^{2,3}

In addition to theories, nursing also considers several classification systems, with the Taxonomy of the North American Nursing Diagnosis Association (NANDA International)⁴ one of the best known and most applied. Thus, NANDA-I constitutes a standardized language system, recognized worldwide by nurses, organized into 13 domains, 47 classes and 244 nursing diagnoses⁵.

Idiopathic Ulcerative Colitis (IUGR)

Idiopathic ulcerative colitis is a chronic inflammatory disease. Inflammation usually starts in the rectum and lower part of the colon, but it can also involve the entire colon. Its cause is unknown. It was believed that diet and stress could be among the causes of the disease, but it is now known that this may only make the problem worse, but not completely cause the disease. An immune system disorder can also give rise to symptoms when an abnormal immune response causes it to attack the body's own cells. In this case, the cells of the lining of the colon and rectum. It is as if the organism understood that the large intestine was a foreign organ, persistently trying to fight it. Heredity also appears to play a role in the incidence of ulcerative colitis, as the disease occurs in people who have family members with the disease. However, most people with ulcerative colitis do not have this family history.⁶

In the mild form of the disease, the basic symptoms such as diarrhea and rectal bleeding occur. During the period of exacerbation, there may be three to five bowel movements a day, which also contains rectal bleeding. Progressing to moderate form, add to the previous symptoms, severe abdominal pain. In the severe phase, diarrhea, mucus, pus, and rectal bleeding are predominant, and may be accompanied by abdominal pain. Therefore, the main symptoms of IUGR are diarrhea or rectal urgency (diarrhea 10 to 20 times a day being common), together with rectal bleeding. Abdominal pain, loss of appetite, fever, weight loss, anemia, and mucus in the stool.⁶

Complications can include heavy intestinal bleeding (including blood clots in the stool), severe abdominal distension (inflammation), and toxic megacolon (inflammation accompanied by severe infection that can enter the bloodstream and cause sepsis). The presence of chronic bloody diarrhea can lead to anemia. Ulcerative colitis also has manifestations in other organs such as the eyes, joints, skin, bile ducts and liver. Particularly important is ankylosing spondylitis, which causes rigidity with almost total immobility of the spine.⁶

The first step in determining the diagnosis is to examine the patient's and family's detailed medical history, including complete information on symptoms, along with a

physical examination. Through blood tests, it is possible to detect changes in blood elements and the presence of inflammation, helping to detect the presence of anemia, low red blood cell counts, and (white) immune defense elements. A stool test is used to rule out an infection or to reveal whether there is blood in it. Sigmoidoscopy is used to examine the rectum and lower third of the colon. Colonoscopy examines the entire colon and the end of the small intestine.⁷

The classification of disease activity can be assessed using the Mayo Score, which can be divided into disease into remission (0 to 2 points), mild activity (3 to 5 points), moderate (6 to 10 points) or severe (11 and 12 points). The Mayo Score assesses the following parameters: number of bowel movements, presence of rectal bleeding, endoscopic findings, and patient global assessment. Such data were obtained from the patient's last consultation viewed in the patient's electronic medical record (PEP).⁸

The treatments work by decreasing inflammation in the colon wall. This allows the colon to repair itself and helps relieve symptoms of diarrhea, rectal bleeding, and abdominal pain. In drug treatment, aminosalicylates are indicated (reduce inflammation in the wall of the gastrointestinal tract), corticosteroids (keep the immune system under control) and immunomodulators (modulates the immune system reaction to prevent continued inflammation). When patients do not respond well to conventional therapy, biological therapies, which are known as anti-TNF agents, come into use. TNF (tumor necrosis factor) is a chemical produced by our bodies to cause inflammation. Antibodies are proteins made to adhere to these chemicals and thereby allow the body to destroy the chemical and reduce inflammation.⁷

When it is not possible to control inflammation with medications, surgery is scheduled, with two surgical options. The first involves an external pouch known as an ileostomy, which is an opening in the abdomen through which stool is emptied into a synthetic pouch adhered to the abdominal wall. The second is an internal connection called the ileo-anal anastomosis, which is created when the small intestine adheres to the anus sphincter, which eliminates the need for a stoma.⁷

Transitional Cell Carcinoma (TCC)

Transitional cell carcinomas (TCC) account for about 90% of uroepithelial tumors.⁹

Environmental factors have been associated with an increased risk of TCC, and the identification of these factors is hampered by the long latency period (18 years) between exposure and the appearance of the tumor. The main cause of TCC is smoking, with exposure time being the more important risk factor than daily consumption. Carcinogenic chemical agents tend to cause bladder tumors. This fact is due to the longer contact of these agents, present in the urine, with the bladder epithelium and the conversion, in the bladder, of some agents to conjugated forms that can promote the tumor.¹⁰

Other risk factors related to tumors are aromatic amines; 2-naphthylamine; benzidine; xenylamine; 4-



nitrodiphenyl; smoke; coffee; sweeteners; phenacetin; paracetamol; Balkan nephropathy (Balkans with endemic familial nephropathy have an unexplained predisposition to develop TCC).¹⁰

Most patients have hematuria, and dysuria and pollakiuria can also occur if there is also bladder involvement. Colic pain may accompany obstruction (obstructive uropathy). The classic triad of flank pain, abdominal mass, and hematuria occurs in 10% of patients, usually with advanced disease.¹⁰

The prognosis will depend on the depth of penetration into, or through, the uroepithelial wall. The probability of cure is higher for patients with superficially located tumors (90%), being lower for those with deeply invasive tumors (10 to 15%). If the tumor penetrates the wall or if distant metastases occur, cure is unlikely.¹⁰

In patients with unexplained symptoms, ultrasound, or computed tomography (CT) with contrast is performed. If the diagnosis cannot be excluded, cytological or histological analysis is performed for confirmation. A small proportion of patients present at diagnosis with symptoms of metastatic disease (weight loss, anorexia, bone pain, and abdominal mass). Differential diagnosis may include intestinal gas overlap, tuberculosis, external compression of the collecting system by anomalous vessels, blood clot, radiolucent calculus, and fungal ball.¹⁰

CT is essential in the assessment of obstructive lesions due to the possibility of performing local staging and planning treatment. In the diagnostic evaluation, it is more sensitive than excretory urography because it visualizes a minimal concentration of contrast in kidneys with impaired renal function, precisely outlining the collecting system.¹⁰

Through the endoscopy exam, the following can be used: cystoscopy (in cases of macroscopic hematuria there is the possibility of lateralizing the bleeding); ureteral catheterization (used to collect urine from the upper urinary tract, with greater accuracy in cytological evaluation compared to urine collected through urination, however it is associated with high false-negative and false-positive rates); and the use of flexible ureteroscope, which increased the diagnostic possibility, allowing direct collection of material for analysis.⁹

The usual treatment is radical nephroureterectomy, including bladder cuff excision. It starts with an endoscopic incision, with the Collins loop, around the ureteral meatus up to the perivesical fat. In this way, the ureter is detached from the bladder and can be removed with a bladder cuff by lumbotomy or laparoscopy. Next, nephrectomy is performed via lumbotomy, or laparoscopy and the ureter is removed along with the kidney. Partial ureterectomy is indicated in some cases (patients with distal ureter tumor, decreased renal function, or single kidney). Occasionally, a chemotherapy drug such as mitomycin C or BCG is instilled. However, the effectiveness of chemotherapy treatment has not yet been established.¹⁰

Conservative endoscopic treatment is performed in patients with a single kidney, bilateral disease, renal failure, evidence of early-stage low-grade tumor, or in patients at high surgical risk. Resection, electrocoagulation, or laser can

be used. Radical surgery has better survival rates compared to conservative treatment for more advanced stage tumors.¹⁰

The aim of this study was to report the experience of nursing students in the care of patients with idiopathic ulcerative colitis and transitional cell carcinoma of the ureter, following the steps of the Nursing Process proposed by Wanda Horta.

Methodology

This is a qualitative study of the experience report type. The nursing process carried out had as conceptual support the Theory of Basic Human Needs¹, by Wanda Horta, and the nursing diagnoses elaborated from the Taxonomy II of the North American Nursing Diagnosis Association (NANDA)⁴, Classification of Nursing Outcomes (NOC)¹¹, Classification of Nursing Interventions (NIC)¹².

This method of investigation has a great deal of involvement on the part of researchers, they are studies applied in direct nursing care with the aim of deepening the problems and needs of the patient, family, and community.

The study was carried out during practical activity in a surgical inpatient unit, in the discipline of Adult and Elderly Clinical and Surgical Health, in the undergraduate nursing course. To achieve the proposed objectives, interviews, research in the patient's electronic medical record and physical examination were carried out, which supported the nursing diagnoses and other stages of the process. The data collection instrument was developed by the professors of the discipline, which included the steps of the nursing process as proposed by Horta.

It was authorized by the patient, who, after reading and being aware of the study, signed the Informed Consent Term and that of the hospital institution by signing the Letter of Agreement.

Experience Report

The study subject, a 76-year-old male patient, with infection and dehiscence in a surgical wound after total colectomy and right nephroureterectomy for idiopathic ulcerative colitis and transitional cell carcinoma of the ureter.

In 1995, the patient was diagnosed with idiopathic ulcerative colitis (IUGR), remaining without clinical activity for 22 years. In 2013 and 2016, a colonoscopy exam was performed, observing discrete pancolitis IUGR (Mayo 1).

The patient started to present clinical activity of the disease in early 2017, having diarrhea five times a day with blood and abdominal pain and, subsequently, eight times a day, with a loss of approximately 10 kg in two months.

In May 2017, he suffered severe abdominal pain in the hypogastric region, with 20 bowel movements a day, containing blood and mucus, thus initiating anemia, as evidenced by intense active IUGR pancolitis (Mayo 3) through colonoscopy. He was hospitalized for approximately 20 days.



When he had severe abdominal colic, accompanied by 15 to 20 bloody stools a day, he was hospitalized again, explained by the exacerbated activity of the IUGR (Mayo 3). At that time, the possibility of a surgical intervention (colectomy) was discussed with the patient, as well as its risks and benefits.

When she attended the gastroclinic clinic in November, she reported daily pain in the lumbar spine, which worsened on exertion. Regarding UCUR, he was presented with two therapeutic options: one, drug, vedolizumab, which he would have the possibility of obtaining through legal proceedings or surgical intervention, total colectomy with a definitive ileostomy bag. He opted for medication.

As a continuation of treatment, in February 2018, he presented absence of neoplastic signs, through urethrocytscopy, requested due to microscopic hematuria present since 2014. As well, three more colonoscopies were performed: April 2018 (Mayo 3), June 2018 (May 2) and September 2018 (May 2) and a CT scan.

The latter, with a report in October 2018, showed transitional cell carcinoma in the right ureter with ureterohydronephrosis, and the result was informed to the patient the following day. After diagnosis, there was indication for total colectomy due to refractoriness to clinical treatment and the risks of systemic immunosuppression in relation to tumor recurrence or metastases.

Patient was admitted in November 2018 for surgery of total colectomy, right nephroureterectomy and terminal ileostomy in the right flank. The procedure was uneventful, and, in the immediate postoperative period, he presented a surgical wound in the mesogastric region with a tubulolaminar drain on the left flank.

Two days after hospital discharge, she was admitted to the Emergency Room via the Mobile Emergency Care Service (SAMU 192) with symptoms of inappetence, worsening of abdominal pain in the surgical wound (which she reported being present since discharge), weakness, nausea, and chills. She presented dehiscence in the middle third of the operative wound with visualization of the intestinal loop (ventration), without evisceration, with purulent drainage at the site due to an intracavitary abscess due to infection.

He remained in the ward under the care of the nursing team to provide care and carry out the dressing, as he had no indication for a new surgical approach. She was discharged twelve days later with guidance on the dressing and drug prescriptions.

Nursing Evolution

Evolution performed in the Gastrosurgery ward, during the internship in the Clinical and Surgical Adult Health discipline.

O.J.C., 76 years old, male, married.

Admitted due to infection and surgical wound dehiscence.

She reports accepting the hospital diet well (pasty) and good water intake.

Spontaneous urinary elimination, yellowish in color and odorless. Fecal elimination through ileostomy, with a semi-liquid appearance and greenish color.

Reports sleeping well, uneventful, and daytime rest.

Figure 1. Functioning ileostomy in the right flank, surgical wound dehiscence after colectomy and nephroureterectomy, tubulolaminar drain in the left flank. Botucatu, São Paulo, Brazil, 2018



SSVV: RR = 22 rpm, HR = 79 bpm, T = 35.8°, BP = 130x80 mmHg, Blood glucose = 96 mg/dL, Pain = 0 (0 – 10).

NEUROLOGICAL: conscious patient (Glasgow = 15), relates well, appears oriented in time and space, contacts and has good memory.

CABOONG: normal colored skin. Bilaterally equal eye movements, no nystagmus and normal hearing acuity. Bright, clear, symmetrical eyes, isochoric pupils, eyelids close completely, white, and pale sclera. Ears are similar in shape and are proportional to the face. Permeable nostrils, with the presence of scar resulting from five previous dermatological surgeries due to CPB.

CHEST (anterior): no use of accessory muscles, smooth chest surface, no lesions, lumps, or pain. Thoracic-abdominal breathing, of normal amplitude. On percussion clear pulmonary sound over the lungs. On pulmonary auscultation, vesicular murmurs were present, without adventitious sounds.

HEART: Ictus cordis palpable. B1 palpated in mitral and tricuspid focus, without thrills; B2 not palpable. On auscultation 2 BCRNF, without murmurs.

ABDOMEN: Flat, without collateral circulation or herniations. Presence of an ileostomy in the region of the right flank, functioning, shiny, red in color. Presence of a tubulolaminar drain in the left flank region, with thick, light brown exudate, draining 29ml. Surgical wound dehiscence in the mesogastric region with visualization of a ruptured intestinal loop. The dressing was changed (yellowish, thick) with a jet of 0.9% saline solution of 250ml and gauze. Applied Protozan, leaving it to act for about 10 minutes. Coverage made with Rayon soaked in Aquacel and gauze and fixed with tape for occlusion. Corset for compression.

VASCULAR AND PERIPHERAL: Arms with uniform color and texture, without lesions. Uniformly colored legs of the skin, symmetrical growth of hair and nails, absence of

lesions and varicosities, no edema, and no signs of DVT. Carotid, brachial, radial, popliteal, pedial and posterior tibial

pulses present (2+) and regular. Presence of peripheral venous access in MSD, without inflammatory signs.

Nursing Diagnosis and Implementation

Chart 1. Nursing Diagnosis and Implementation. Botucatu, São Paulo, Brazil, 2018

Domain	Diagnosis (NANDA) ⁴	Results (NOC) ¹¹	Interventions (NIC) ¹²
2- Nutrition	Risk of deficient fluid volume related to deviations that affect fluid absorption due to the surgical procedure	Electrolytic Balance • Decreased serum electrolytes (3-5) • Water balance (5-5) • Vital signs (5-5) • Nutritional intake (5-5) • Orthostatic hypotension (2-5) • Headquarters (3-5) • Dizziness (3-5)	Hydroelectrolyte control • Evaluate and quantify excreted liquids • Assess water intake • Obtain laboratory samples for monitoring altered fluid or electrolyte levels • Weigh daily and monitor trends • Monitor for signs and symptoms of dehydration • Monitor vital signs (hemodynamic) • Monitor nutritional status • Advise the patient and family regarding hydration measures or supplemental electrolyte administration • Observe and guide the characteristics of elimination by ileostomy
4- Activity/rest	Impaired physical mobility related to discomfort and dyspnea on exertion evidenced by prescribed restrictions on movement and deconditioning	Mobility • Movements performed with ease (3-5) • Discomfort level (3-5) • Shortness of breath (3-5)	Exercise Therapy Walking • Assist the patient with initial ambulation and as needed • Help the patient to get up, walk a specific distance and with the specific number of supports • Watch for signs of fatigue and respiratory discomfort while walking
11- Security/protection	Risk of infection related to invasive procedure	Severity of infection • Fever (5-5) • Pain (5-5) • Colonization of the vascular access device (5-5) • Elevated WBC count (4-5)	Infection control • Guide hand washing for health professionals • Ensure aseptic handling of all EV routes • Perform abdominal dressings and venous access with aseptic technique • Administer appropriate antibiotic therapy protection against infection • Monitor systemic and localized signs and symptoms of infection
	Impaired skin integrity related to skin surface disruption evidenced by operative wound dehiscence	Wound healing: second intention • Granulation (2-5) • Scar formation (1-5) • Decreased wound size (1-5) • Serous drainage (2-5)	Injury care Perform dressing change monitoring the characteristics of the lesion, including drainage, color, size and odor • Clean with 0.9% saline solution • Put affected area in immersion with Protozan • Maintain aseptic technique while applying the dressing • Compare and regularly record all changes in the injury
	Delayed surgical recovery related to evidence of interruption in the healing of the surgical area evidenced by postoperative infection at the surgical site	Surgical Recovery: Convalescence • Drainage in the dressing (4-5) • Drainage by drain (2-5) • Wound infection (3-5) • Dehiscence (2-5)	Infection control • Administer antibiotic therapy as appropriate • Ensure proper wound care techniques • Wear sterile gloves Wash hands before and after each patient care activity

**Image Exams
Colonoscopy**

Colonoscopy is the endoscopic examination of the colon (large intestine), and often the terminal ileum as well. It allows the assessment of the characteristics, extension, and severity of mucosal lesions and, in addition to collecting ileocolonic biopsies for microscopic analysis, making it essential for the diagnosis of inflammatory bowel diseases (IBD).^{13, 14}

For its realization, it is necessary that the colon is free of feces, therefore, it is important to have an adequate

preparation beforehand (it implies an appointment). Intestinal cleansing for a colonoscopy is essential for a successful colonoscopy. A clean colon allows for a complete examination to be performed more easily, quickly, and safely, and for the visualization and possible treatment of lesions, even of small dimensions. A colonoscopy in a poorly prepared patient can make the exam more time consuming and with a higher risk of complications, in addition to delaying the diagnosis.¹⁵

In the case of large gastrointestinal bleeding, the procedure will be carried out with the patient in hospital,



with the colon cleansing being carried out at the same time as the individual is hemodynamically stabilized.¹⁵

Figure 2. (A and B) Colonoscopy performed in 2013. (C) Colonoscopy performed in 2016 showing aggravation of the CUCR. Botucatu, São Paulo, Brazil, 2018

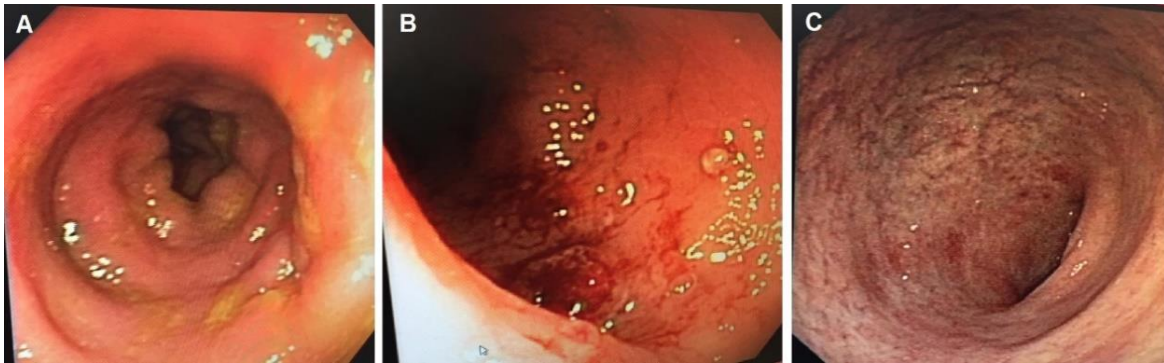
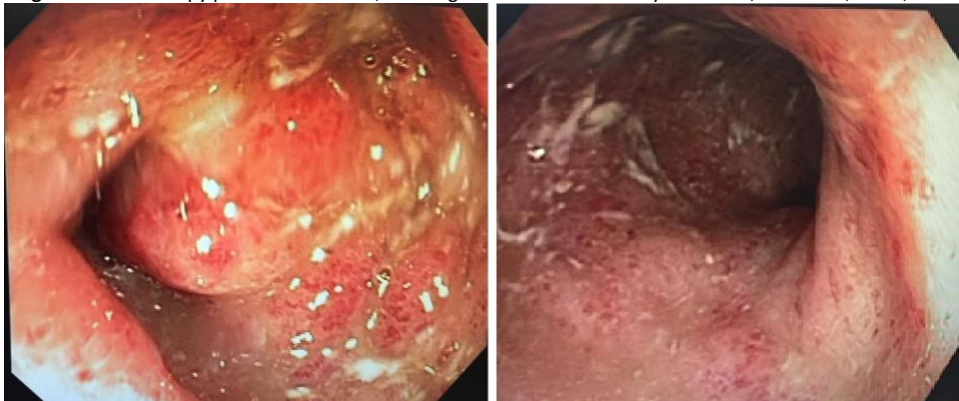


Figure 3. Colonoscopy performed in 2018, showing RCU in intense activity. Botucatu, São Paulo, Brazil, 2018



Computed Tomography

Figure 4. Computed tomography performed in 2018, showing transitional cell carcinoma in the right ureter with ureterohydronephrosis. Botucatu, São Paulo, Brazil, 2018



Computed tomography is a non-invasive, fast, reliable, and highly accurate diagnostic method. CT has three important advantages over conventional radiography: (1) the three-dimensional information is presented in the form of a series of thin slices of the internal structure of the studied part; (2) the system is more sensitive in differentiating tissue types when compared to conventional radiography, so that differences between tissue types can be more clearly delineated and studied; and (3) can manipulate and adjust the image after scanning is complete. This function includes features such as brightness adjustments, edge enhancement and enhancement of specific areas, as well as grayscale contrast, for better visualization of the anatomy of interest.¹⁶

The device consists of an x-ray source that is activated while it performs a circular movement around the patient, emitting an x-ray beam in the form of a fan. Opposite this source is a series of detectors that transform

the radiation into an electrical signal that is converted into a digital image.¹⁶

Final Considerations

The Nursing Process was a guide in this study, as it guided and supported the performance in relation to patient care. As much data as possible were collected and analyzed during the physical examination, history, and anamnesis. Mainly using the patient's electronic medical record for data validation, linking with practical findings and to obtain an effective result in relation to patient care.

Conducting this study provided us with an opportunity to apply and expand all the knowledge acquired throughout the course through the Nursing Process. All this experience was fundamental for our growth, not only professionally, but also in groups and personnel, strengthening ties and sharing lessons learned. Being in front of the patient made us value the entire biopsychosocial being that he is, making comprehensive care possible.

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