2nd Edition of the Contest of Clinical Cases related to the non-surgical clinical management of kidney stones

Title: Altered urinary pH as an aetiology of granulomas in urostomised patients

Keywords: urostomy, granulomas, urinary pH, bricker.

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1. Summary

We present the case of a 72-year-old man who underwent laparoscopic radical cystectomy with 8po Bricker urinary diversion in 2016 for muscle-invasive bladder cancer. During his check-ups with our stomatotherapist, the patient started to develop peristomal granulomas. Our aim is to eliminate the granulomas formed and prevent the appearance of new lesions by controlling the urinary pH through the administration of Lit-Control® pH Down. The use of Lit Control pH Down in our patient has succeeded in lowering urinary pH, eliminating part of the peristomal granulomas, and improving urinary parameters such as urine odour and colour.

2. Introduction

Spain has one of the highest incidences in the world, along with the rest of southern Europe and North America. The AECC (Asociación Española Contra el Cáncer) estimated that in the past year 2020 Spain would reach 22,350 cases per year. Therefore, we are facing a frequent pathology and with a tendency to increase in the coming years.

The treatment of choice for muscle-invasive bladder cancer is radical cystectomy with urinary diversion. In our centre the most used urinary diversion technique is the creation of an ileal conduit. Once the anastomoses have been performed, the distal segment of the ileal conduit is ostomised in the right lower quadrant approximately 5-6 cm to the right of the umbilicus.

Among the complications secondary to the creation of a stoma we find mainly two types, those that appear early, and those that appear late.

Focusing on late complications, we define them as those that appear more than a month after the intervention, and most usually develop slowly and can be observed by both the patient and the stomatherapist when following up.

In this case we will focus on granulomas as a late complication.

Granulomas are defined as non-neoplastic skin lesions that appear as hard, fleshy masses located at the junction between the stoma mucosa and the surrounding skin, are tan in colour and cause bleeding and pain to the patient. These granulomas can lead to stoma stenosis and promote bacterial superinfection.

The aetiology of granuloma formation in the stoma is not fully understood, so no effective treatment is available.

In most cases the aetiology of granulomas is traumatic, and the causes include:

- Deficient resorption of the suture material remaining too long in the mucocutaneous junction causing inflammation due to the presence of a foreign body.
- Continuous rubbing of the mucosa against the edge of the device due to inadequate size.
- Irritation due to persistent skin contact with the efluent (urine).
- Trauma to the mucosa.
- Alkaline urine can lead to the formation of phosphate crystals that settle in the peristomal area, producing small wounds on the skin and mucosa, which may even bleed.

In most urological services in Spain, granulomas are treated with acetic acid + 50% water fomentation and/or fulguration with silver nitrate, although very little evidence of efficacy has been found.

The pH of the urine is a key factor in the formation of microcrystals, which would cause the inflammation that leads to the formation of granuloma. Based on this we have treated this patient with Lit-Control pH Down with good results.

3. Description of the clinical case

a) Important background information

We present the case of a 66-year-old male at the time of diagnosis, who by transurethral resection of the bladder was diagnosed with high-grade urothelial carcinoma with glandular (40%) and squamous (10%) differentiation infiltrating the lamina propria (pT1); for this reason he underwent laparoscopic radical cystectomy with urinary diversion via ileal conduit in 2016.

b) Diagnostic support studies and results

During the check-ups with the stomatological nurse, urine analysis by sediment is performed, repeatedly showing a urinary pH of 8 and 9. In addition, both the patient and the stomatotherapist report foul smelling urine and the formation of granulomas leading to stoma stenosis.

c) Diagnosis

The diagnosis of granulomas is made by the stomatotherapist nurse using the D.E.T Scale (Discolouration. Erosion. Tissue overgrowth):

For the evaluation of the peristomal skin condition, the DET scale is used to determine the condition of the patient's skin in the peristomal area covered by the device. It considers three parameters: colour, skin integrity and tissue overgrowth. For each parameter, the percentage of affected area (0-3) and the severity of the changes (0-2) are evaluated, in total from 0 to 15.

Image 1: Granulomatous formation in our patient at diagnosis.

d) Treatment

On 13/11/2019 it was decided to start treatment with Lit-Control pH Down to lower the urinary pH.

e) Evolution

The follow-up is carried out by the stomatherapist nurse through monthly reviews according to evolution in which visual inspection, urinary pH analysis and shear debridement by cold scalpel of the granulomas are carried out.

Image 2: Granuloma after 1 year of treatment with Lit-Control pH Down

f) Clinical results

After a treatment period of 3 months with Lit-Control pH Down, an improvement of the granulomas, a decrease of the urinary pH (pH of 5), a decrease of the urine odour and a decrease of the number of associated urinary tract infections can already be observed.

After 2 years of treatment with Lit-Control pH Down the patient maintains an improvement of the peristomal skin and granulomas, a urinary pH of 5, as well as an improvement of urine odour and colour (urine remains clear and transparent).

4. Discussion

We are faced with this common problem in cystectomised patients with an ostomy that usually appears approximately 6 months after surgery.

To this day the only treatments used are acetic acid + 50% water fomentation and cauterisation with silver nitrate without scientific evidence to support it.

Given the lack of effective and standardised treatments for this problem, we find ourselves in a situation where we have to look for therapeutic alternatives.

In this case, given the characteristics of our patient (alkaline urinary pH, fetid urine, and granuloma formation) we consider that the administration of Lit-Control pH Down is beneficial to improve the quality of life of our patient by minimising the peak, pain and improving the quality of the peristomal skin.

5. Conclusions and recommendations

Approximately 50% of ostomized patients suffer from complications in the skin surrounding the stoma. Knowing the characteristics of the skin will help us to treat complications and improve the quality of life of ostomized patients.

Stoma complications related in this case to granulomas, are going to suppose limitations in personal care, pain, discomfort, anxiety, depression, and quality of life in general.

The use of Lit-Control pH Down in patients with granulomas that have an alkaline pH can be an effective treatment and therefore an improvement in the quality of life of our patients.

6. References

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