

Chemical Gastroenterocolitis After the Root Canal Therapy - A Case Report

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ABSTRACT

A 46-year-old patient with history of treated previously for colitis, was reported with severe abdominal discomfort, pain or uneasiness in colon area after the dental re root canal therapy was initiated. His physician started treatment with Xifan (Rifaxin 200mg), Proflora (intense Probiotic high potency), Divigest ADS digestive enzymes, Gasdep (lactobacillus acidophilus) ever since the re root canal therapy started two months ago. When he developed his abdominal pain rectal discomfort, he was prescribed mesalazine rectal suppositories for his colitis. He was advised further investigations to perform gastroscopy, colonoscopy, to check for any edematous mucosa, any polyps like change in the whole mucosa of the stomach, duodenum, first part of jejunum, distal ileum, complete colon and rectum. With the history from the dentist, Formacresol was given as the intra canal medication after removing the gutta-percha. And his previous endodontic sealer was endomethasone. The diagnosis would be complicated without any of to achieve in synopsis with use of any dental materials like Formacresol, Endomethasone. Intracanal medication was changed to calcium hydroxide paste, his colitis symptoms decreased, calcium hydroxide paste was continued as intracanal medicament during the retreatment.

Keywords: Chemical Gastroenterocolitis, Gastroenteritis, Root canal therapy, RCT

INTRODUCTION

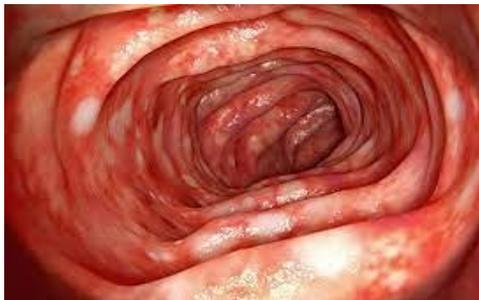
Gastroenteritis is a short-term illness triggered by the infection and inflammation of the digestive system. Symptoms can include abdominal cramps, diarrhoea and

vomiting. Some of the causes of gastroenteritis include viruses, bacteria, bacterial toxins, parasites, particular chemicals and some drugs.(1) Gastroenteritis due to chemical toxicity can also occur after ingesting water or food contaminated by chemicals such as arsenic and heavy metals such as lead, mercury, or cadmium or after directly eating or swallowing a chemical or metal.(2) Heavy-metal poisoning frequently causes nausea, vomiting, abdominal pain, and diarrhea. Eating large amounts of acidic foods, such as citrus fruits and tomatoes, may also cause gastroenteritis.(3) This case report shows Gastroenterocolitis post root canal therapy.

CASE PRESENTATION

A 46 year old man started with severe abdominal discomfort, constipation after he started his re root canal treatment in the dental clinic since two months retreatment for periapical infection in his previously root canal treated upper right central incisor. Since the periapical pathology was huge his previous dentist removed all the gutta percha and used an intra canal medicament containing Formacresol. He then used complained to the dentist about the pain or tightness in his colon area, irritability, constipation whenever he visited the dentist for change of root canal dressing for four weeks. At that time the dentist used formacresol the root canal when inserted locally into the canal. His status worsened further. The patient referred

himself to Gastroenterologist, who started with medications with Xifaxin (Rifaxin 200mg), Proflora (intense Probiotic high potency), Divigest ADS digestive enzymes, Gasdep (lactobacillus acidophilus as the symptoms manifested with dental re root canal treatment. Then he was referred to Endodontist who planned for healing the peri apical pathology with surgically by apicoectomy. The intracranial medicament was changed to non setting Calcium hydroxide paste. He was advised to check for hematological, biochemical blood tests and abdominal scan was advised when he mentioned about the abdominal discomforts. Noticed the above symptoms were coming down when the non setting calcium hydroxide paste dressing was used and not any other phenolic or cresol based intracanal medications during the treatment. He was advised to see the gastroenterologist for duodenoscopy and colonoscopy to confirm the same.



DISCUSSION

There are many types of inflammations of separate parts of the digestive tract. Following forms of gastritis are described in the literature :bacterial, chemical , Crohn's –associated, eosinophilic, lymphocytic, radiation and noninfectious granulomatous gastritis .The common types of colitis are inflammatory bowel disease(ulcerative colitis, Crohn's disease, and indeterminate colitis, Microscopic (lymphocytic and collagenous colitis), radiation-induced, infectious (pseudomembranous colitis caused by Clostridium difficile, enterohemorrhagic colitis caused by Shiga toxin, etc.) (4,5),chemo-therapy induced(6), diversion(7), ischemic ,checkpoint inhibitor

induced ,(8) and chemical colitis (9).Even though the aforementioned medical conditions are single organ diseases and have preferential areas of location, it can be in some cases expected that other parts of gastro intestinal system or distant organs are also affected ,for example ,duodenal manifestation of Crohn's disease(10),Pseudomembranous gastritis (11) ,and backwash ileitis in ulcerative colitis (12).Gastroenteritis or enteritis is general name of the condition ,which is mostly infectious and characterized with vomiting or diarrhea(13).

Most common hypothesis involves autoimmunity as a T-cell mediated pathway. In telogen effluvium, stress and hormones are mainly described triggers. Trigger in aggression in behavior due to auto immunity as T-cell mediated pathway (20,21).

The GI inflammation manifested in all parts of the GI system is rarely described: also the definition "Gastroenterocolitis "(GEC) is rarely used in the literature, we have identified the following types of GEC: fulminating Staphylococci GEC (14), PD-1 inhibitor GEC (8), nosocomial rotavirus – induced GEC (15), collagenous GEC (16), and diffuse infectious phlegmonous GEC (17). it is not well understood, but the most common hypothesis involves autoimmunity as a T-cell mediated pathway. In Telogen effluvium, stress and hormones are mainly described triggers. Chemotherapeutic aggression is the cause of anagen effluvium. Considering the etiopathogenesis of all the aforementioned diseases, the inflammation of GI system in our most chemical origin, and also be explained with chemical impact of toxins In Telogen effluvium, stress and hormones are described as triggers, triggers aggression in behavior due to auto immunity with T-cell mediated pathway. We believe the aforementioned changes are due to the immunotoxicity of the root canal medicament. Moreover, in the poison control center in Bonn, Germany, one case already been reported after retreatment with CMCP. The toxicity of intracanal medicament in the animal model is also

established (22).

Also there are many similarities with rare disease Cronkhite –Canada (CCS), which is manifested with ubiquitous gastrointestinal polyps, associate with diarrhea and malabsorption (23). The malabsorption further leads to alopecia and onycholysis. The stool culture must be done in order to exclude an antibiotic –induced colitis or viral infection.

Intracanal medicaments used for root canal treatment are generally antibacterial. The common reported side effect is from the cytotoxicity of Formacresol are extremely rare. (24). To the best of our Mal absorption leads alopecia later on. Intra canal medicaments are mostly antibacterial agents that are used in the treatment of dental root canal systems. The common reported side effect of its toxicity, but the side effects are extremely rare from the dental medicaments (24). To the best of our knowledge and literature review, this is the first reported case of GI tract inflammation associated with the use of this medication. The use of Formacresol is widely spread dental treatment in Germany with few adverse effects reported. Because of the lack of data, it is not feasible to assess the possible risk factors for the development of the described symptom complex. Other alternative antimicrobial medicines for root canal treatment are, for example, chlorhexidine gel 2 percent, Chlorhexidine powder 1 percent, povidine –iodine Chlorhexidine 1%, povidine –iodine, and poly hexanide are preferred (24)

CONCLUSION

We experienced a case in which an application of Formacresol caused a massive chemical inflammation of the GI tract. The chemical ignition of the GI system is rare and usually limited to one organ. The diagnosis can be challenging if patient history is not obtained, and this case illustrates a delay in diagnosis. Therefore, patients with unexplained inflammation of the GI tract must be questioned about the past dental treatment. We should bear in

mind that the ingestion of Formacresol can cause alopecia. The literature is not clear about the therapy of chemical GEC, and in our case, Mesalazine was, in an initial phase, a useful treatment, but subsequently, it was not successful and encouraging. The purpose of this case report is to raise awareness about this uncommon adverse effect of intracanal medicaments.

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