

A case of radiation-induced mucositis

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Abstract

Oral mucositis is a common morbidity induced by radiation therapy and/or chemotherapy for head and neck malignancies. This often results in treatment delays, premature treatment cessation and increased cost. New treatments for oral mucositis are emerging but their success is variable. This is a case report of oral mucositis in Non-Hodgkin's Lymphoma (NHL) reported after 11th fraction of radiotherapy. Chief complaints were ulceration of mouth with painful swallowing. Clinical diagnosis as per the World Health Organization Grading Scale was Grade 3 oral mucositis. *Phytolacca 30C* was prescribed on the basis of acute totality of symptoms. Ulcers were reduced considerably within 4 days and radiotherapy was restarted and 22 fractions of radiation were completed. This case report suggests that homoeopathic intervention may be the treatment for mucositis in cancer patients undergoing radiation treatment.

Keywords: Cancer, Homoeopathy, Mucositis, Non-Hodgkin's Lymphoma, Radiotherapy

INTRODUCTION

Non-Hodgkin's Lymphoma (NHL) includes a heterogeneous group of lymphoproliferative disorders. The primary treatment for NHL includes chemotherapy, radiation, immunotherapy and stem cell transplant. The side effects from radiation therapy will depend on the area being treated. Patients can expect to have dry mouth, mouth sores, esophagitis and dysphagia if head and neck region is being irradiated.^[1]

Oral mucositis is a common complication of cancer therapy and incidence ranges between 80% and 97%.^[1-3] Incidence of Grade 3-4 mucositis may be up to 40%-55% depending upon type of radiotherapy and concomitant use of chemotherapy.^[4,5] The severity of oral mucositis is high in patients having primary tumours in the oral cavity, oropharynx or nasopharynx. Use of concurrent chemotherapy, total radiotherapy dose >50Gy, altered fractionation radiation schedules (e.g., more than one radiation treatment per day) are known to increase the incidence and severity of oral mucositis.^[4,6,7]

Lesions of oral mucositis are often very painful and compromise nutrition and oral hygiene as well as increase the risk for local and systemic infection. Mucositis may limit the patient's ability to tolerate chemotherapy or radiation therapy and significantly affects patient's quality of life (QoL).^[8] Severe oral toxicities can also compromise the delivery of optimal cancer therapy protocols, since treatment dose reduction or schedule

modifications may be necessary to allow for resolution of oral lesions. In cases of severe oral morbidity, the patient may no longer be able to complete the recommended cancer therapy. These disruptions in cancer treatment due to oral complications can directly affect patient survivorship. Mucositis score is used to measure and convey the toxicity of a particular therapy which serves as a nursing management tool and is used to determine the efficacy of new treatments for the condition. The commonly used assessment tools are the World Health Organization (WHO) grading, Radiation Therapy Oncology Group grading, Oral Mucositis Assessment Scale and The National Cancer Institute Common Toxicity Criteria.^[9-11]

CASE REPORT

History

A 55-year-old male (teacher by occupation), known case of NHL (high grade) was admitted to Delhi State Cancer Institute (DSCI) and Hospital on 4th May 2016 for the complaint of ulceration in oral cavity after 11th fraction of radiotherapy. Following allopathic medicines were prescribed for 8 days but there was no relief: tablet Ciprofloxacin 200mg/BD, injection

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Metrogyl 4mg/TDS, injection Forcan 100mg/OD, injection Tramedol 100mg/BD, injection Pantop OD, injection Emset BD, injection Lasix, Betadine mouth gargles, Zylee lotion LA, syrup Muccogel 2 tsp/OD. On 11th May 2016, the case was referred by a consultant to the homoeopathic unit with presenting complaints of ulceration in mouth with painful swallowing, pain radiating to ears on swallowing, feeling of roughness of throat with burning pain, feeling of heat in the throat with scanty stringy saliva since 4–5 days. Severe soreness and dryness of throat were present with aggravation in morning. The patient was thirsty with desire for cold water but was unable to drink, blood pressure was 160/100 mmHg, and pulse rate was 98 per/min.

Laboratory tests showed white blood cell count of 4.19 μ L, haemoglobin level of 5.44 g/dl, platelets of 343 \times 10⁹/L, differential leucocyte count –neutrophil - 69.7%, lymphocytes-11.4%, monocytes-10.8%, eosinophils-5.3%, basophils-0.6%. Biopsy (oropharynx) revealed diffuse large B cell NHL (high grade), BCL-2+ve and weak CD20+ve.

Examination

Oral mucosa was hyperaemic and congestion was seen on posterior aspect of hard, soft palate. Buccal mucosa having yellowish deposits with offensive smell. Tongue was reddish and dry. Small ulcerated patches were seen. On upper surface, there were dark bluish patches.

WHO grading was Grade 3.

Intervention

Homoeopathic medicine *Phytolacca* 30C procured from GMP certified manufacturer was dispensed in water doses every 2 hourly (6 doses) for 1 day on the basis of acute totality. The symptoms were graded as frequency intensity and duration^[12] which comprised of ulcers on the tongue and throat with

painful swallowing 3+; pain radiating to ears on swallowing 3+; feeling of roughness of throat with burning pain 3+; dark redness of oral cavity with congestion on posterior aspect of hard, soft palate and buccal mucosa 3+; tongue red with dark bluish patches on upper surface 2+.

Follow-up and outcomes

The follow up and outcomes after administration of homoeopathic medicine is given at Table 1.

DISCUSSION

Conventional management of oral mucositis has been largely palliative to date. In this case, homoeopathic medicine *Phytolacca* 30, prescribed on the basis of acute totality resolved the mucositis (WHO Grade 0) within 4 days, whereas usually Grade 3 mucositis takes 3–6 weeks to resolve.^[13-15] Oral mucositis is a common, debilitating complication of cancer chemotherapy and radiotherapy. The development of Grade 3 mucositis warrants stoppage of radiotherapy as further injury to the mucosa causes its permanent damage.^[16] It has been demonstrated that patients with oral mucositis are significantly more likely to have severe pain and a weight loss of $\geq 5\%$.^[17] Justification of medicine *Phytolacca* includes Ulceration of mouth with pain radiating to ears on swallowing, feeling of roughness of throat with burning pain, dark redness or bluish redness of throat, tongued tip, feeling rough and scalded. Bluish patches on the tongue were identified. Ulcerated sore throat cannot swallow even food and water.^[18] Although *Arsenic*, *Merc*, *Lach*, *Nat mur* and *Phosphorus* were also closely indicated medicines for condition but not considered because *Arsenic* - absence of restlessness; *Merc* - thirst was not so marked; *Lachesis* - difficulty of swallowing present for both liquids and food; left-sided affection was not there and aggravation for touch and pressure was not there; *Nat*

Table 1: Timeline of patient response and medicine prescribed with its dose

Date	Response	Prescription
12 May 2016	Pain while swallowing was better. Pain radiating to ears on swallowing was better. Feeling of roughness of throat with burning pain was present. Inside the oral cavity; redness is only seen on soft palate. Buccal mucosa showed considerable reduction in inflammation. Tongue-bluish patches were reduced. No pain killer was given last day. WHO Grade 2	<i>Phytolacca</i> 30C water dose, 6 doses, every 2 hourly \times 1 day
13 May 2016	Ulcers were better but still had pain while eating. Pain radiating to ears on swallowing was very less. Feeling of roughness of throat with burning pain was better. Dryness of mouth present. On examination, buccal mucosa, palate and tongue had devoid of redness. Ulcers on root of tongue and palate were better. On examination with tongue depressor - At pharyngeal arch, there was mild redness seen. Bluish patches of tongue improved considerably. Patient had biscuit with tea in breakfast. WHO Grade 1	<i>Phytolacca</i> 30C water dose, 6 doses, every 2 hourly \times 1 day
14 May 2016	Ulcers were better. On and off pain while eating. Pain radiating to ears was no more present. Soreness and dryness of mouth-better. Appetite-patient had daal, ice cream, and biscuit with tea on the last day. Thirst-improved, now patient was able to drink water. On examination, buccal mucosa, palate and tongue- No redness was seen. Ulcers on root of tongue and palate-one or two were seen. Bluish patches on tongue-better. All injections were stopped. Only tablet forcan 150 mg/on alternateday, sypmultivit 1t sp/tds, tablet pantop was advised. WHO Grade 0. Patient got discharged and continued with the homoeopathic treatment in OPD for the rest of radiation therapy with less intense side effects and with good adherence to the treatment plan (total 22 fraction of radiation) which got over on 3 June 2016. Problems such as sensitivity of teeth, gingivitis, loss of taste, dryness of mouth and rawness of tongue were treated symptomatically in the subsequent follow-ups at the homoeopathic OPD	<i>Phytolacca</i> 30C water dose, 6 doses, every 2 hourly \times 1 day Medicines such as <i>Pulsatilla</i> , <i>Avena sativa</i> , <i>Bryonia</i> , <i>Merc. Sol</i> were prescribed time to time based on the presentation of the complaints

WHO: World Health Organization; OPD: Outpatient department

mur absence of mapped tongue; *Phosphorus*-bleeding from gums and ulcers, thirst for very cold water were not present.

Case was also assessed as per the Modified Naranjo Criteria, which suggest the causal relation between the intervention and outcome and the score was 8.^[19] However, limitation of the case includes lack of objective evidences i.e., photographs and QoL scale.

This case shows the utility of Homoeopathy to treat radiation-induced mucositis. Homoeopathic medicines can help reduce the symptom burden, thereby improving QoL and compliance to radiation treatment. Homoeopathy can help reduce unscheduled radiation treatment breaks, which prolongs the total radiation treatment time, compromises on the efficacy of therapy and results in diminished treatment outcomes as well as reduced QoL. Economic burden is a major issue. The per patient incremental cost of Grade 1–2 oral mucositis can be as high as \$1700 and that of Grade 3–4 oral mucositis can rise upto \$6000.^[20] Nonzee *et al.*'s analysis which was limited to severe oral mucositis (Grade 3–4) found the incremental cost per patient to be \$17,000.^[21] Reduction in days of hospitalization due to mucositis and costs can be effectively managed through homoeopathic treatment.

CONCLUSION

Homoeopathy can play a key role in treatment of radiation-induced mucositis, thereby reducing radiation treatment breaks, days of hospitalization, improving adherence to radiation therapy. Further studies on appropriate sample are required to establish the efficacy of Homoeopathic intervention in radiation-induced mucositis patient.

Patient perspective

I was in agonizing pain when I was under radiotherapy. I couldn't eat for days but after the homoeopathy treatment, I not only started eating, my ulcers were also cured completely.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

None declared.

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केस रिपोर्ट

विकरण प्रेरित म्यूकोसाइटिस में होम्योपैथिक उपचार पर केस रिपोर्ट

सार

मौखिक म्यूकोसाइटिस विकिरण चिकित्सा और/या सिर एवं गर्दन की दुर्दमताओं के लिए कीमोथेरेपी द्वारा प्रेरित एक सामान्य विकार है। इसका परिणाम अक्सर, उपचार में विलंब, समय से पहले उपचार समाप्ति और बढ़ी लागत हो सकते हैं। मौखिक म्यूकोसाइटिस के लिए नए उपचार उभर रहे हैं लेकिन उनकी सफलता अस्थायी है। यह नॉन-हॉजकिन्स लिफोमा (लसीकार्बुद) (एनएचएल) में मौखिक म्यूकोसाइटिस की एक केस रिपोर्ट है जो कि 11वीं बार रेडियोथेरेपी के बाद दर्ज की गई। मुख्य शिकायतें थी, निगलने में दर्द के साथ मुंह का छाला। विश्व स्वास्थ्य संगठन के ग्रेडिंग स्केल के अनुसार नैदानिक जांच में मौखिक म्यूकोसाइटिस ग्रेड तीन का था। लक्षणों की तीव्र पूर्णता के आधार पर फाइटोलेकम 30 सी दी गई। 4 दिनों के भीतर अल्सर काफी कम हो गया और रेडियोथेरेपी को पुनःआरंभ किया गया तथा विकिरण के 22 अंश पूरे किए गए। इस केस रिपोर्ट से पता चलता है कि होम्योपैथिक अंतःक्षेप द्वारा विकिरण उपचार से गुजर रहे कैंसर रोगियों में म्यूकोसाइटिस का उपचार हो सकता है।

Fallbericht

Fallbericht zur homöopathischen Behandlung einer strahleninduzierten Mukositis

Orale Mukositis ist eine häufige Erkrankung, die durch Strahlentherapie und/oder Chemotherapie bei malignen Erkrankungen des Kopfes und Nackens induziert wird. Dies führt häufig zu Behandlungsverzögerungen, vorzeitiger Beendigung der Behandlung und erhöhten Kosten. Neue Behandlungsmethoden bei oraler Mukositis werden mit unterschiedlichen Erfolgen eingeführt. Dies ist ein Fallbericht über eine orale Mukositis beim Non-Hodgkin-Lymphom (NHL), nach der 11. Strahlentherapiesitzung. Hauptbeschwerden waren Ulzerationen des Mundes mit schmerzhaftem Schlucken. Die klinische Diagnose gemäß der Bewertungsskala der Weltgesundheitsorganisation war Grad drei der oralen Mukositis. *Phytolacca 30 C* wurde auf der Grundlage der Gesamtheit der Akutsymptomatik verschrieben. Die Ulzera wurden innerhalb von vier Tagen erheblich reduziert und die Strahlentherapie wieder aufgenommen, sodass 22 Sitzungen abgeschlossen werden konnten. Dieser Fallbericht legt nahe, dass eine homöopathische Behandlung bei Krebspatienten mit Mukositis die einer Strahlentherapie unterzogen werden, angezeigt ist.

Informe de caso clínico del tratamiento homeopático en la mucositis inducida por radiación

Resumen

La mucositis oral es una patología habitual inducida por radio- y/o quimioterapia en procesos malignos de cabeza y cuello. A menudo, da lugar a un retraso o a una interrupción del tratamiento, así como a un aumento del coste. Se están presentando nuevos tratamientos de la mucositis oral, pero su éxito es variable. En este informe de caso clínico, se trata de una mucositis oral en un linfoma no Hodgkin (LNH) que se documentó tras la 11ª fracción de la radioterapia. Las principales molestias fueron ulceraciones en la boca con dolor a la deglución. El diagnóstico clínico según la *World Health Organization Grading Scale* (Escala de Graduación de la OMS) era de mucositis oral de Grado 3. A partir de la totalidad de los síntomas agudos, se prescribió *Phytolacca 30C*. Las úlceras se redujeron considerablemente en 4 días, con lo que se volvió a reiniciar la radioterapia y se pudieron completar las 22 fracciones de radiación. Este informe de caso clínico indica que la intervención homeopática puede ser el tratamiento de la mucositis en pacientes oncológicos sometidos a radioterapia.

Étude de cas

Étude de cas sur le traitement homéopathique de la mucosite provoquée par la radiothérapie

Résumé

La mucosite buccale, parfois mortelle, est un des effets secondaires les plus courants des traitements par radiothérapie et/ou chimiothérapie des cancers de la tête et du cou. Elle conduit souvent à des retards de traitement, à l'arrêt prématuré du traitement et à une augmentation des coûts. De nouveaux traitements de la mucosite buccale font leur apparition mais leur succès est variable. Nous présentons ici une étude de cas de mucosite buccale dans un cas de lymphome non hodgkinien (LNH) signalé après la 11^e fraction de radiothérapie. Les principaux symptômes étaient l'ulcération de la bouche et une déglutition douloureuse. Le diagnostic clinique selon la classification de l'Organisation mondiale de la Santé était une mucosite buccale de grade III. Du *Phytolacca 30°C* a été prescrit sur la base de l'ensemble des symptômes aigus. Au bout de 4 jours, les ulcères avaient considérablement réduit, la radiothérapie a recommencée et 22 fractions ont été administrées. Cette étude de cas suggère que l'intervention homéopathique pourrait être le traitement des mucosites chez les patients atteints de cancers subissant des traitements de radiothérapie.

放射性黏膜炎的顺势療法治療病例報告。印度顺势療法研究雜誌

摘要

口腔黏膜炎是由於為頭部和頸部的惡性腫瘤進行放射治療和/或化療而誘發的常見疾病。這往往導致延誤治療、過早停止治療和增加成本。現時，口腔黏膜炎有新的治療，但它們的成功亦有變數。這是非霍奇金氏淋巴瘤（NHL）案例，在第11次放射治療後口腔黏膜炎的病例報告。主訴是口腔潰瘍伴隨吞嚥疼痛。按照世界衛生組織分級量表，臨床診斷為3級口腔黏膜炎。在急性整體症狀的基礎上處方出商陸30C。在4天內潰瘍大幅減少，放射治療重新開始，完成22次局部放射治療。這份病例報告建議顺势療法干預對接受放射治療而引發口腔黏膜炎的癌症患者可能有效。