



ORIGINAL ARTICLE

Sialadenitis after radioiodine therapy. Analysis of factors that influence the response to medical treatment[☆]



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Received 19 November 2014; accepted 23 July 2015

Available online 7 December 2015

KEYWORDS

Sialadenitis;
Differentiated
thyroid cancer;
Radioiodine induced
sialadenitis;
Intraductal
instillation

Abstract

Objectives: To assess the incidence of ¹³¹I-induced sialadenitis (SD) in patients with differentiated thyroid cancer (DTC), to analyze clinical and other factors related to metabolic radiotherapy that may predict the lack of response to conventional medical therapy (CMT), and to determine the effectiveness of intraductal steroid instillation in patients failing CMT.

Material and methods: Fifty-two patients with DTC, 45 females (86.5%) and 7 males (13.5%) with a mean age of 44.21 ± 13.3 years ($r = 17-74$) who received ablation therapy with ¹³¹I after total thyroidectomy. Patients with diseases and/or medication causing xerostomia were excluded. Patients underwent salivary gland scintigraphy with ⁹⁹Tc (10 mCi).

Results: Eighteen patients (34.62%) had SD and received antibiotics, antispasmodics, and oral steroids for 15 days. They were divided into two groups: responders to medical therapy ($n = 12$, age 44.3 ± 14.4 years, 2 men [17%], 10 women [83%], cumulative dose 225 ± 167.1 mCi) and non-responders to medical treatment, who underwent steroid instillation into the Stensen's duct ($n = 6$ [33%], 2 men [33%], 4 women [67%], age 50 ± 13.8 years, cumulative dose 138.3 ± 61.7 mCi). Scintigraphy showed damage to the parotid and submaxillary glands.

[☆] Please cite this article as: Geres AE, Szafryk Mereshian P, Fernández S, Rey Caro DG, Castro R, Podio R, et al. Sialoadenitis por radioyodo. Análisis de factores que influyen en la respuesta al tratamiento médico. Endocrinol Nutr. 2015;62:493–498.

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PALABRAS CLAVE

Sialoadenitis;
Cáncer diferenciado
de tiroides;
Sialoadenitis inducida
por radioyodo;
Instilación intraductal

Conclusion: Incidence of ^{131}I -induced sialadenitis was similar to that reported by other authors. Age, mean cumulative dose of ^{131}I , and involvement of parotid and submaxillary glands did not condition response to CMT; however, male sex was a conditioning factor. Symptom persistence for more than 15 days makes instillation into the Stensen's duct advisable. This is an effective and safe method to avoid surgical excision of salivary glands.

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Sialoadenitis por radioyodo. Análisis de factores que influyen en la respuesta al tratamiento médico

Resumen

Objetivos: Estudiar la incidencia de sialoadenitis (SD) por ^{131}I en pacientes con cáncer diferenciado de tiroides (CDT), analizar los factores clínicos y otros vinculados a radioterapia metabólica que puedan predecir la falta de respuesta al tratamiento médico convencional (TMC) y determinar la eficacia de la instilación intraductal del Stenon (ITS) en pacientes con fracaso al TMC.

Material y métodos: Cincuenta y dos pacientes con CDT, 45 mujeres (86,5%) y 7 hombres (13,5%), con edad media $44,21 \pm 13,3$ años, que postiroidectomía total recibieron dosis ablativa de ^{131}I . Excluimos individuos con enfermedades/medicación causantes de xerostomía. Realizamos gammagrafía de glándulas salivales con ^{99}Tc (10 mCi).

Resultados: Presentaron SD 18 pacientes (34,62%) tratados con antibióticos, antiespasmódicos y corticoides vía oral durante 15 días. Se les dividió en 2 grupos: respuesta al tratamiento médico $n=12$ (67%), edad $44,3 \pm 14,4$ años, 2 hombres (17%), 10 mujeres (83%), dosis acumulativa 225 ± 167 mCi; y sin respuesta al tratamiento médico, $n=6$ (33%), a los que se instiló corticoides en conducto de Stenon; edad $50 \pm 13,8$ años, 2 hombres (33%), 4 mujeres (67%), dosis acumulativa $138,3 \pm 61,7$ mCi. Demostramos lesiones en la gammagrafía de glándulas parótidas y submaxilares.

Conclusión: La incidencia de sialoadenitis por ^{131}I fue similar a la descrita por otros autores. La edad, la dosis media acumulada de ^{131}I y la afectación de glándulas parótidas o submaxilares no condicionaron diferente respuesta al TMC, solo relacionada con el sexo masculino. La persistencia de síntomas durante más de 15 días hace recomendable la ITS de corticoides, método eficaz y seguro para preservar dichas glándulas ante otras opciones como la exéresis quirúrgica.
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Introduction

Ablation therapy with radioiodine (^{131}I) for differentiated thyroid cancer (DTC) has a known effect on salivary glands called sialoadenitis.¹ Clinical signs of sialoadenitis include pain, swelling, decreased salivation and, in some patients, purulent secretion (Fig. 1). Xerophthalmia and nasolacrimal obstruction have also been reported as complications of ablation therapy.² Persistence of symptoms of salivary and lacrimal dysfunction may compromise quality of life and cause complications in the affected patients.^{3,4}

Salivary gland swelling related to radiation would apparently depend on the dose administered; parotid glands, because of their anatomical structure, are much more sensitive to radiation than submaxillary glands.⁵ Cells from the salivary gland and ductal parenchyma contain a sodium/iodine transporter that also confers them a greater capacity to concentrate the radionuclide.⁶ Sialoadenitis may occur early, within 48 h of treatment, or up to 3–6 months after therapy administration.

Some reviews have reported an incidence of acute sialoadenitis after administration of ^{131}I ranging from 24% to 67%, and an incidence of chronic sialoadenitis ranging from 11% to 43%;^{7–9} salivary gland damage is shown by scintigraphy in 10–60% of patients with acute or chronic symptoms.^{5,10,11}

Prophylactic measures to promote clearance of intraglandular radioiodine and prevent this complication have included intake of large amounts of fluid, lemon juice, or sour candy. Silberstein et al. used in a group of patients pilocarpine as a secretagogue for salivary glands, but the drug was not successful for preventing sialoadenitis in their study.¹² An additional measure to decrease the effect of ^{131}I in salivary glands is the use of recombinant human thyroid-stimulating hormone (rhTSH) before administration of the ablative dose. This has been shown to decrease radiation damage in tissue, but additional studies comparing the use of rhTSH and thyroxine removal are needed.^{13,14}

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