

Expert System for Mouth Problems in (Stomatitis and Tongue) Disease

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Abstract: Background: The mouth is a breeding ground for good and bad bacteria, it is active all the time and can attack your healthy teeth at any time, and the wrong dependence is always that brushing your teeth only is sufficient. There are many factors that affect the health of your mouth including speech, chewing, aging, etc., and since it is extremely important that we keep them clean. There are many health problems that may affect the mouth, tongue, and gums, and in this article we will learn about a list of the most prominent of these problems and ways of dealing with them. Many people suffer from mouth problems, including Stomatitis and tongue (mouth ulcers and tongue, erosive ulcers, or aphthous ulcers), which is the appearance of small, painful ulcers inside the mouth that usually begin in childhood and recurrence frequently. In this paper an expert system is designed to help users correctly diagnose oral. **OBJECTIVES:** This paper will solve the problems of treatment for Stomatitis and tongue through correct diagnosis and treatment. **METHODS:** In this paper, we introduce an expert system for diagnosing Stomatitis and tongue that will help clinicians explore everything related to Stomatitis and tongue. We look forward to providing simplified answers. The proposed expert system for Stomatitis and tongue was applied using a disease diagnosis using the SL5 Object Expert System Language.

Keywords: Artificial Intelligence, Expert Systems, SL5 Object, Stomatitis and tongue

1. INTRODUCTION:

Types of stomatitis and tongue and its symptoms Stomatitis appears in the form of blisters that may affect any part of the mouth, such as: the tongue, the edges of the lips, the gums, the lining of the cheeks, and the throat. Celsius a few days before the blisters appear. Having trouble eating and drinking. Runny saliva. Gum swelling. Feeling pain. Oral inflammation lasts from seven to ten days.

Causes of stomatitis and tongue Stomatitis and tongue can be caused by several factors, and more than one factor may occur at the same time, which increases the chance of infection, including them knowing the cause of inflammation to treat it, and most of the **factors that cause** stomatitis, and the tongue are the following:

- Viral infection. Fungal infection.
- Smoking, or chewing tobacco.
- Bruising from dentures, or biting internal parts of the mouth, such as: the tongue, cheeks, and lips, or intra-oral surgery.
- Dry mouth.
- Stress. Infection with some diseases, such as Crohn's disease, weakened immune system.
- Bacterial infection. Treatment of stomatitis and tongue Oral ulcers usually heal within two weeks without resorting to treatment, and in the event that the main cause of stomatitis occurs, it must be treated to get rid of these ulcers, and here comes a mention of some of the methods that help get rid of the pain of ulcers, and their **prevention:**

- A void spicy, salty, and citrus foods.
- Gargle cold water to get rid of heartburn.
- Avoid hot drinks.
- Maintaining dental hygiene.
- Take pain relievers, such as: ibuprofen or acetaminophen.
- Use of toothpaste containing cortisone. Rinse with water and salt.
- The use of a local anesthetic on bedsores, such as: lidocaine.
- Drink plenty of water. It is worth noting that there is often no cure for stomatitis except that some drug and home remedies can be used to reduce the severity of inflammation and its symptoms, such as: Taking aciclovir.



Figure 1: Stomatitis and Tongue



Figure2: Stomatitis and Tongue

2. RECURRENT APHTHOUS STOMATITIS:

Recurrent aphthous stomatitis (RAS), a common oral mucosal disorder characterized by chronic, inflammatory, and ovoid ulcers, has a complex aetiology. Recurrent aphthous stomatitis is a very common condition. Although the cause is still unknown, it is noticeable that there is a genetic role in infection. Recurrent aphthous stomatitis often begins in childhood years, which are statistics that 80% of patients are younger than 30 years old. Patients with recurrent aphthous stomatitis often develop ulcers. Some of them suffer from the appearance of one or two ulcers a few times a year. While patients suffer from taking a persistent appearance of ulcers. The frequency and intensity of attacks often decrease with age. It provides that there are many factors that prepare a patient for injury or provoke an attack. These factors include oral harm and psychological distress.

Etiology of recurrent aphthous stomatitis RAS belongs to the group of chronic, inflammatory, ulcerative diseases of the oral mucosa. Up to date, the etiopathogenesis of this disease remains unclear; however, it is considered to be multifactorial. The results of previous studies indicate that genetically mediated disturbances of the innate and acquired immunity play an important role in the disease development. Factors that modify the immunologic responses in RAS include genetic predisposition, viral and bacterial infections, food allergies, vitamin and microelement deficiencies, systemic diseases, hormonal imbalance, mechanical injuries, and stress. For the genetic predisposition,

In this paper an expert system is designed to help users correctly diagnose Stomatitis and Tongue.

There are many health problems that may affect the mouth, tongue, and gums, which are (cold sores or so-called blisters of fever, thrush, black hair on the tongue, oral ulcers, coloration, flat lichen, geographical tongue, temporomandibular syndrome, oral cancer,) with some information about the disease and how to treat it. The SL5 Expert System Language was used to design and implement this expert system.

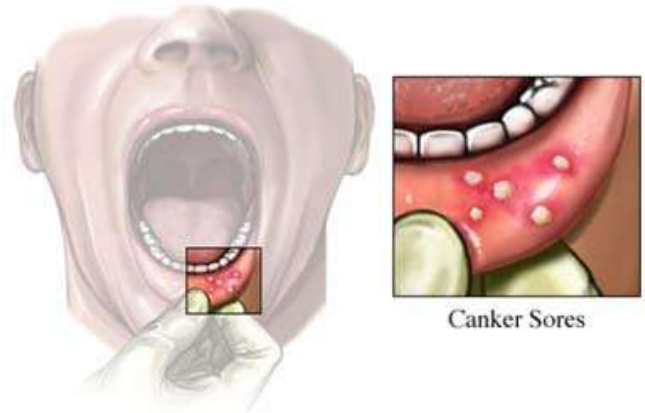


Figure 3: Recurrent aphthous stomatitis

3. EXPERT SYSTEM:

A system that uses human experience, which simulates thinking through the application of knowledge and interfaces and the use of expert knowledge as databases and data within the system and dealing with the ability to solve problems in a human expert. This type of system seeks to exploit specialized skills or information held by a group of people in specific areas. It can be considered as a service advisory computerized. It can also be called system routing information. These systems are used to explore for medical diagnosis or as educational aids.

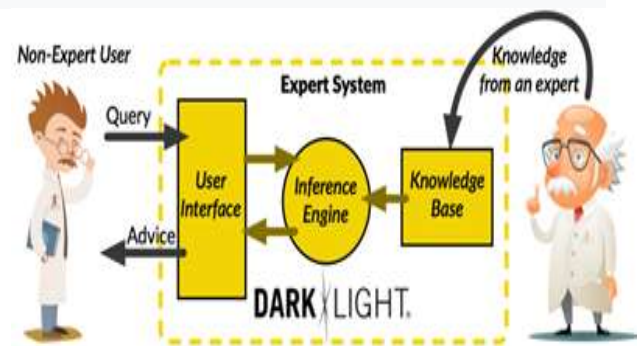


Figure 4: The figure presents the Main Components of Typical Expert System

The proposed expert system for aphthous stomatitis was applied using a disease diagnosis using the SL5 tone of the organism that remains for the simple Level 5 organism.

4. MATERIALS AND METHODS:

The proposed expert system will ask the user to answer the questions about the symptoms of the patient and end up with the diagnosis. Then this expert system shows the user some information about the disease and some advices telling him / her how to deal with the person. Figure 5 shows the decision tree of the expert system for diagnosing the mouth problems. Figure 6: The figure shows diagnosis and advice of the expert system.

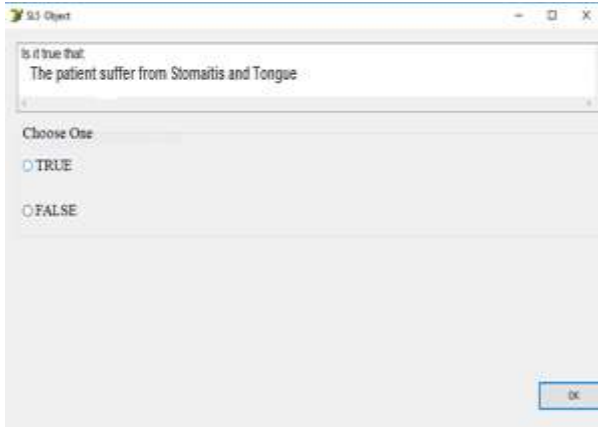


Figure 5: The figure shows when the system asks the user.

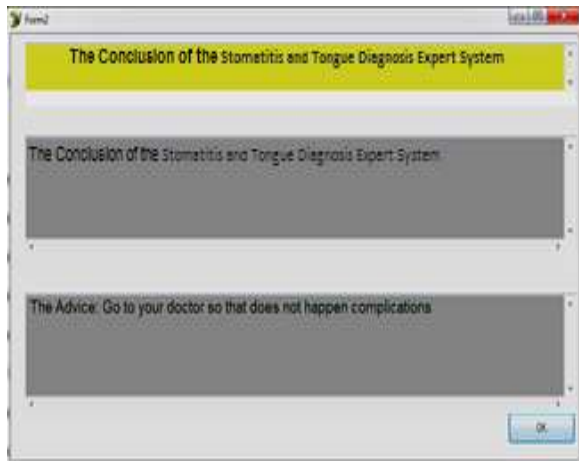


Figure 6: The figure shows diagnosis and advice of the expert system.

5. LITERATURE REVIEW.

There is a lot of Expert Systems that were designed to diagnose human Diseases [31-63]. But there is no specialized expert system for diagnosis of Stomatitis and Tongue diseases available free and Use a language SL5 Object language. This expert system was characterized to be easy to use by specialists and People concerned. This is due to the coordinated application interface. Some of these Expert Systems are specialized in one specific disease and others in 3 diseases. But the current proposed expert system is specialized in the diagnosis of 9 Stomatitis and Tongue diseases.

6. DIAGNOSISTREE:

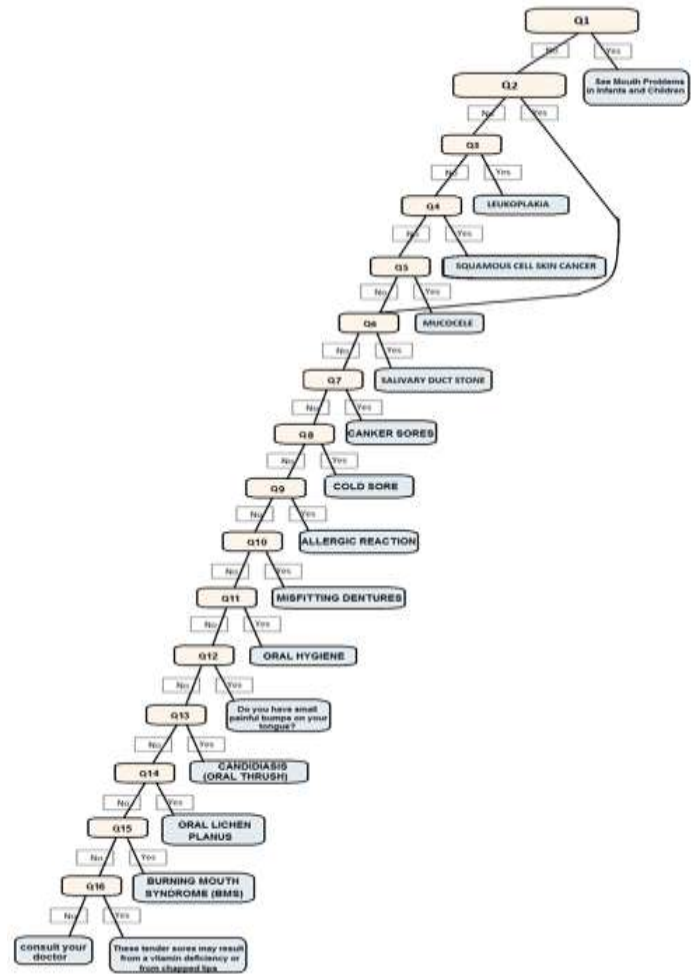


Figure7:Diagnosis tree.

7. KNOWLEDGE REPRESENTATION:

The main sources of knowledge in this expert system are Stomatitis and Tongue The captured knowledge was converted to the SL5 object syntax (facts, rules and object).There are several factors that may cause oral ulcers together:

- Genetic factors
- Bloody factors such as iron deficiency, vitamin B12 deficiency, folic acid deficiency, and lack of periodic neutrophils.
- Immunological factors
- Hormonal factors such as hormonal changes during menstruation or pregnancy.
- Allergy to a food.
- Psychological pressure
- Stop smoking
- Dynamic trauma, that is, the tongue or cheek muscles during food, etc.
- Behçet syndrome
- Digestive diseases

Symptoms begin with a feeling of pain or burning in the mouth, followed by a day or two after the appearance of erosive ulcers. An ulcer is not preceded by a bubble. The pain is very severe, exceeding what can be expected from a very small lesion, and lasts 4 to 7 days. Eating ulcers often form on loose tissues, such as those on the inside of the lip, cheek, on the tongue, on the bottom of the mouth, on the soft palate, or in the throat. Sores appear as shallow, round or oval spots, with a yellowish-gray center and red border. Most sores are small in size and ulcers usually disappear on their own within 10 days without leaving any scarring. Large ulcers are less common. Big sores take an irregular shape, healing may take a few weeks, and often leave scars.

Classification of recurrent aphthous stomatitis:

Three types of RAS, namely minor, major, and herpetiform types, are recognized.¹ Minor RAS is the most common type that occurs in 80% of RAS patients. The oral ulcerative lesions of minor RAS measure between 3 mm and 10 mm in diameter. They usually arise from the nonkeratinized oral mucosae with the buccal and labial mucosae being affected frequently. The lesion may be preceded by an erythematous macule with the prodromal symptoms of burning or stinging for a few hours to one or two days. Then, the oral ulceration appears and is subsequently covered by a yellow-white fibrinopurulent pseudomembrane. The oral ulcers heal without scarring in 7–14 days. Although the minor RAS lesion is small, the pain is often out of proportion for the size of the ulceration. The oral ulcerative lesions of major RAS measure from 1 cm to 3 cm in diameter. They usually take 2–6 weeks to heal and may lead to scarring. The labial mucosa, soft palate, and tonsillar fauces are most frequently involved. In severe cases, the repeated scarring processes may result in a limitation of mouth opening.

Treatment:

- pain killers.
- Oral rinse.

Corticosteroids taken orally, the condition is first treated with analgesia with the same general procedures used in the treatment of other oral ulcers. In addition, doctors often recommend using chlorhexidine mouthwash. In the event of a large number of erosive sores, the doctor may also prescribe an oral rinse containing corticosteroids, such as dexamethasone. If there are fewer erosive ulcers, doctors recommend using ointments that contain other types of corticosteroids, such as flucinonide or clobetasol, which can be mixed with carboxymethylcellulose, and applied to the site of the ulcer.

Patients with frequent attacks of erosive ulcers can start using oral rinses as soon as they feel the ulcer is about to appear, that is, before it actually appears. Patients who use corticosteroids can develop an oral infection caused by *Candida*.

8. SYSTEM EVALUATION:

Accordingly a preliminary evaluation, medical students tested this proposed Expert System and they were satisfied with its performance, efficiency, accuracy, reliability, user interface,

ease of use, and they expressed the severity of the convenience of this expert system.

9. CONCLUSION:

This paper has presented an expert system for diagnosis the Stomatitis and Tongue, which provides the patients with the diagnosis, recommendation and treatment; based on the expert system knowledge base and data collected from the patients. This expert system saves the patient the time and effort by allowing the patient to diagnose the Stomatitis and Tongue faster more accurate than the traditional diagnosis. This expert system does not need intensive training to be used; it is easy to use and has user friendly interface. It was developed using SL5 Object Expert System language.

10. FUTURE WORK :

This expert system is considered to be a base of future ones; more mouth problems diseases are planned to be added and to make it more accessible to users from anywhere at any time.

11. EXPERT SYSTEM SOURCE CODE:

! Written by Yomna Ryiad Alastal

ATTRIBUTE start SIMPLE

ATTRIBUTE The patient suffer from pain in your mouth SIMPLE

ATTRIBUTE The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks SIMPLE

ATTRIBUTE The patient suffer from painless lesion, growth or lump on the lip or face SIMPLE

ATTRIBUTE The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue SIMPLE

ATTRIBUTE The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking SIMPLE

ATTRIBUTE The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue SIMPLE

ATTRIBUTE The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips SIMPLE

ATTRIBUTE The patient suffer from a red, swollen tongue or lips SIMPLE

ATTRIBUTE The patient suffer from wear dentures that seem to rub your gums or irritate your mouth SIMPLE

ATTRIBUTE The patient suffer from red and swollen gums that may bleed when you brush or floss SIMPLE

ATTRIBUTE The patient suffer from small, painful bumps on your tongue SIMPLE

ATTRIBUTE The patient suffer from creamy white patches on the tongue, inner cheek or gums that are painful when scraped SIMPLE

ATTRIBUTE The patient suffer from raised patches of white lines or bumps that may also include red open sores on the inside of your cheeks or sides of the tongue SIMPLE

ATTRIBUTE The patient suffer from a burning sensation in your mouth that may involve several areas SIMPLE
ATTRIBUTE The patient suffer from cracking or open sores in the corners of your mouth SIMPLE
INSTANCE the domain ISA domain

WITH start := TRUE
INSTANCE the application ISA application
WITH title display := introduction
WITH conclusion display := Conc
INSTANCE introduction ISA display
WITH wait := TRUE
WITH delay changes := FALSE
WITH items [1] := textbox 1
INSTANCE textbox 1 ISA textbox
WITH location := 10,10,800,350
WITH pen color := 0,0,0
WITH fill color := 100,200,100
WITH justify IS left
WITH font := "Arial"
WITH font style IS bold
WITH font size := 14
WITH text:= "

Mouth Problem Diagnosis Expert System

Written By Yomna Ryiad Alastal

This Expert System diagnoses Mouth Problems through a dialogue between the System and the End User
The Conclusion of the finding is displayed and an Advise is given for the End User to solve the problem".

INSTANCE Conc ISA display
WITH wait := TRUE
WITH delay changes := FALSE
WITH items [1] := title textbox
WITH items [2] := problem textbox
WITH items [3] := advise textbox
INSTANCE title textbox ISA textbox
WITH location := 20,10,800,70
WITH pen color := 0,0,0
WITH fill color := 200,200,100
WITH justify IS center
WITH font := "Cambria"
WITH font style IS bold
WITH font size := 12
WITH text := " The Conclusion of the mouth problems
Diagnosis Expert System"

INSTANCE problem textbox ISA textbox
WITH location := 20,110,800,130
WITH pen color := 0,0,0
WITH fill color := 170,170,170
WITH justify IS left
WITH font := "Cambria"
WITH font size := 12
WITH text " -----"=:
INSTANCE advise textbox ISA textbox
WITH location := 20,280,800,130
WITH pen color := 0,0,0

WITH fill color := 170,170,170

WITH justify IS left
WITH font := "Arial"
WITH font size := 14
WITH text" -----" =:

RULE R0

IF start

THEN ASK The patient suffer from pain in your mouth

RULE R1

IF The patient suffer from pain in your mouth

THEN ASK The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

RULE R2

IF The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

THEN ASK The patient suffer from painless lesion, growth or lump on the lip or face

RULE R3 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

THEN ASK The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

RULE R4 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

THEN ASK The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking

RULE R5 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking

THEN ASK The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue

RULE R6 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks
AND The patient suffer from painless lesion, growth or lump on the lip or face
AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue
AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking
AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue
THEN ASK The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips
RULE R7 The patient suffer from pain in your mouth
AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks
AND The patient suffer from painless lesion, growth or lump on the lip or face
AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue
AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking
AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue
THEN ASK The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips
RULE R8 The patient suffer from pain in your mouth
AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks
AND The patient suffer from painless lesion, growth or lump on the lip or face
AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue
AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking
AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue
AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips
THEN ASK The patient suffer from a red, swollen tongue or lips
RULE R9 The patient suffer from pain in your mouth
AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks
AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue
AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking
AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue
AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips
AND The patient suffer from a red, swollen tongue or lips
THEN ASK The patient suffer from wear dentures that seem to rub your gums or irritate your mouth
RULE R10 The patient suffer from pain in your mouth
AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks
AND The patient suffer from painless lesion, growth or lump on the lip or face
AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue
AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking
AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue
AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips
AND The patient suffer from a red, swollen tongue or lips
AND The patient suffer from wear dentures that seem to rub your gums or irritate your mouth
THEN ASK The patient suffer from red and swollen gums that may bleed when you brush or floss
RULE R11 The patient suffer from pain in your mouth
AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks
AND The patient suffer from painless lesion, growth or lump on the lip or face
AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue
AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking
AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue
AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips
AND The patient suffer from a red, swollen tongue or lips
AND The patient suffer from wear dentures that seem to rub your gums or irritate your mouth
AND The patient suffer from red and swollen gums that may bleed when you brush or floss

THEN ASK The patient suffer from small, painful bumps on your tongue

RULE R12 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking

AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue

AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips

AND The patient suffer from a red, swollen tongue or lips

AND The patient suffer from wear dentures that seem to rub your gums or irritate your mouth

AND The patient suffer from red and swollen gums that may bleed when you brush or floss

AND The patient suffer from small, painful bumps on your tongue

THEN ASK The patient suffer from creamy white patches on the tongue, inner cheek or gums that are painful when scraped

RULE R13 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking

AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue

AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips

AND The patient suffer from a red, swollen tongue or lips

AND The patient suffer from wear dentures that seem to rub your gums or irritate your mouth

AND The patient suffer from red and swollen gums that may bleed when you brush or floss

AND The patient suffer from small, painful bumps on your tongue

AND The patient suffer from creamy white patches on the tongue, inner cheek or gums that are painful when scraped

THEN ASK The patient suffer from raised patches of white lines or bumps that may also include red open sores on the inside of your cheeks or sides of the tongue

RULE R14 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking

AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue

AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips

AND The patient suffer from a red, swollen tongue or lips

AND The patient suffer from wear dentures that seem to rub your gums or irritate your mouth

AND The patient suffer from red and swollen gums that may bleed when you brush or floss

AND The patient suffer from small, painful bumps on your tongue

AND The patient suffer from creamy white patches on the tongue, inner cheek or gums that are painful when scraped

AND The patient suffer from raised patches of white lines or bumps that may also include red open sores on the inside of your cheeks or sides of the tongue

THEN ASK The patient suffer from a burning sensation in your mouth that may involve several areas

RULE R15 The patient suffer from pain in your mouth

AND The patient suffer from painless white or gray sores that may have a hard, raised coating on the tongue or the inside of the cheeks

AND The patient suffer from painless lesion, growth or lump on the lip or face

AND The patient suffer from a painless, fluid-filled sac that may be bluish in color on the inner lips, gums, palate or under the tongue

AND The patient suffer from pain or swelling under your tongue or in your cheek, especially while eating or drinking

AND The patient suffer from small open and painful sores that are white or yellowish with a red border on the inner lips or cheek, gums or tongue

AND The patient suffer from a sore that is red and crusted on your lip or on the outer edge of your lips

AND The patient suffer from a red, swollen tongue or lips

AND The patient suffer from wear dentures that seem to rub your gums or irritate your mouth

AND The patient suffer from red and swollen gums that may bleed when you brush or floss

AND The patient suffer from small, painful bumps on your tongue

AND The patient suffer from creamy white patches on the tongue, inner cheek or gums that are painful when scraped

AND The patient suffer from raised patches of white lines or bumps that may also include red open sores on the inside of your cheeks or sides of the tongue

AND The patient suffer from a burning sensation in your mouth that may involve several areas

AND The patient suffer from cracking or open sores in the corners of your mouth

THEN text OF problem box: = "The patient has stomatitis and tongue."

AND the text of the text box text: = "Advice: Go to your doctor so that complications do not occur."

ELSE text problem: = "The patient does not have stomatitis or tongue."

AND the text of the text of the text box is Advice: = "Advice: Keep good health, clean your mouth, and do a periodic check."

END

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