Use of the glucose test in evaluation of the function of auditory tube

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INTRODUCTION

Auditory tube is the structure that communicates the average ear with nasopharynx. It remains closed during the rest, protecting the middle ear from the sound waves and pressure variations that affect the atmospheric pressure. The opening occurs intermittently through the Eustachian tube, which reaches the nasopharynx through the mesopharynx, and it is activated primarily by the act of swallowing or the Valsalva maneuver, which allows the balance of the pressures of the middle ear and the environment.

METHODS

Between the 20 patients evaluated in this study, 11 were of masculine genus and 9 of the feminine genus. The age varied between 8 and 16 years and the average age of the sample was of 12.2 ± 1.1 years. The study was of prospective design, where the patients were evaluated in two different tests. In the evaluation with impermeability and Eustachian tube function test, in the glucose test, there was a statistical difference between the two responses of this test, since it can be affirmed that there is a greater positivity in the glucose test than in the Eustachian tube function test.

RESULTS

It is noticed that the test with greater percentage of semipermeable was the glucose test, with 80%, versus 45% of the Eustachian tube function test. It is noticed that the test with greater percentage of impermeable was the Eustachian tube function test, with 50%, followed by “Semipermeável”, with 45%. However, after the comparison between the two responses of this test, since it can be stated that there is greater positivity in the glucose test than in the Eustachian tube function test.

It is noticed that the glucose test has a good sensitivity (67%), but specificity is very low (33.3%).

The test with the greater percentage of semi-permeable is the glucose test, with 80%, versus 45% of the Eustachian tube function test. Consequently, the tubal function test had a greater percentage of semi-permeable, with 45% versus 20% of the glucose test. The glucose test has an excellent sensitivity (100%) and specificity is very low (33.3%).

It is noticed that the most recurrent response of tubal function it was the “Impermeable one”, with 50%, followed by “Semipermeable”, with 45%. However, after the comparison between the two responses of this test, since it can be stated that there is greater positivity in the glucose test than in the Eustachian tube function test.

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DISCUSSION

The job of the glucose solution, like in this study, presents two advantages in relation to the saccharin crystal: beyond allowing a better control of stuck of the applied solution of sugar (the crystal cannot present different sizes), it stimulates with higher frequency the mucociliary system. The substances used in the study of Elbrond and Larsen (23) and Deardo (24) showed that the Eustachian tube is the most permeable to glucose, compared with other substances.

ALTERATIONS OF THE PRESSURE, THAT OCCUR DUE TO THE ACCUMULATION OF SECRECTIONS IN THE MIDDLE EAR AND THE FUNCTION OF THE TUBAL MUCOSA

Alterations of the pressure, that occur due to the accumulation of secretions in the middle ear, and the action of the tensor muscle of the palate promote the expulsion of part of this secretion for the nasopharynx. The bad functioning of tubes due to the blockage promotes a stagnation of the mucus, producing a pathological process of the middle ear, which is the chronic suppuration otitis. Consequently, the tubal function test had a greater percentage of semi-permeable, with 45% versus 20% of the glucose test. The glucose test has an excellent sensitivity (100%) and specificity is very low (33.3%).

Fig 1 – View of timpanic perforation with the microscope

Fig 2 – Patient in position for application of glucose solution.

REFERENCES