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**Update**

In april of 1982, I published the paper Rupture of the Orbicularis Oris in Trumpet Players (Satchmo's syndrome),<sup>1</sup> in which I described a new syndrome due to overactivity of the orbicularis oris muscle in trumpet players. The syndrome is characterized by weakness during pouting and an inability to maintain high notes when playing brass wind instruments.

In the patient presented then, the orbicularis muscle was ruptured in the midline of the lower lip. The muscle was sutured, and the patient regained his playing ability completely in a short time. The result remains good after 4 years and a half, and the patient still plays solo trumpet in his orchestra.

I have treated another patient with the same syndrome by the same technique and have obtained the same good early result. I present this paper for three reasons: First, to my knowledge, there have been no other papers on this subject. Second, I wanted to provide a follow-up on my first patient of 4 years and a half ago. And third, it seems that the injury is not rare, and other brass instrument musicians may benefit from the operation I describe.



Fig. 1. (Left) Pouting is weak and air escapes when the patient blows with pressure. (Right) In the rest position the upper lip has a peak in the middle. From the Clínica de Cirugía Plástica y Estética Dr. Planas (Barcelona) and the Departments of Plastic Surgery at the Universidad Autónoma de Barcelona and the Universidad de Navarra. Received for publication June 26, 1987.



Fig. 2. (Left) Dissection of fibrous mass in the midline of the lower lip. (Right) A scar remaining the midline.

Fig 2. (Left) Dissection of a fibrous mass in the orbicularis oris muscle. (Right) After repairing the orbicularis oris and closing the skin



Fig 3. The peak in the middle of the upper lip

### Case Report

One year ago I saw a 28-year-old trumpet student because of problems he developed when playing his instrument. He had been studying trumpet for 4 years, and owing to his relatively older age as a trumpet student, he had been practicing very hard in order to obtain employment. Two years previously he began using a mute while practicing to avoid disturbing his neighbors. The mute was of poor quality, and the patient had to increase his blowing pressure to compensate for its inadequacies.



Fig. 4. Excision of the peak in the upper lip

Some time later he noticed a burning sensation in the middle of his upper lip. Since then he could not maintain his high notes because of lack of vibration in the middle of the upper lip. On examination, it was clear that he could not pout his lips with force and the upper lip had a peak in its center (Fig. 1). By pointing with his finger the patient indicated that he thought the area of failure was in the middle of his upper lip.

I told him that my experience with his problem was very limited, but he agreed to have the operation nevertheless. On October 6, 1986, the operation was carried out under general anesthesia. Through a vertical incision, I explored the upper lip and found a fibrous mass (Fig. 2, left), which I dissected out and excised. The defect in the orbicularis oris was closed with five sutures of long-term absorbable material (5-0 Vicryl). The vertical incision was then closed (Fig. 2, right).

The patient was allowed to resume playing 3 weeks later, and he began to play with increasing self-confidence. By December 15, 1986, two months later, the patient was very satisfied. He had regained much of his playing ability, and he acquired a bright quality to his tone. His only problem was a protrusion in the center of the vermillion (Fig. 3), which, although present to a lesser degree before the operation (Fig. 1, right), was probably accentuated by resection of the fibrous mass. On December 17, 1986, I did a wedge resection of the excess tissue under local anesthesia (Fig. 4). I last saw the patient on April 8, 1987. He was very satisfied with his result and had good function of his orbicularis oris (Fig. 5). His professor told him that his tone quality is better than it was before he developed his problem.

### Discussion

## Discussion

The two cases of ruptured orbicularis oris in trumpet players have two common characteristics: First, symptoms appeared after the muscle was stressed by overactivity. And second, rupture took place in the midline, in the lower lip in the first patient and in the upper lip in the second patient. One of the patients thought that pressure of the mouthpiece trough the lips and against the teeth contributed to the injury. Both patients recovered very rapidly and experienced no loss of playing proficiency or tone quality. In the first patient, the muscle was sutured with nonabsorbable material (Supramid), and two stitches extruded after several weeks. In the second patient, following Dr. Kaye's suggestion,<sup>2</sup> I used long-term absorbable sutures (Vicryl) with no complication up to the present.



Fig. 5. Patient shows good function of the orbicularis oris postoperatively.

## Summary

In this paper a second case of rupture of the orbicularis oris in a trumpet player is presented. Treatment by direct suture of the muscle has been successful.

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## References

1. Planas, J. Rupture of the orbicularis oris in trumpet players (Satchmo's syndrome). *Plast. Reconstr. Surg.* 69: 1982.
2. Kaye, B.L. Rupture of the orbicularis oris in trumpet players (Satchmo's syndrome) (Discussion). *Plast. Reconstr. Surg.* 69: 692, 1982.

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## Discussion

### Further Experience with Rupture of the Orbicularis Oris in Trumpet Players

by Jaime Planas, M.D.

Discussion by Philip Farkas, D. Mus.

As a professional French horn player and teacher for the last 55 years, I have seen many serious physical problems peculiar to brass players. By far the most serious and debilitating of these problems is a rupture in some area of the Player's orbicularis oris. Although a moderately rare occurrence, it has always been considered fatal to the further playing career of the victim. Therefore one can imagine my elation upon learning that Dr. Jaime Planas, of Barcelona, Spain, has recently successfully performed surgery on two trumpet players who had just such ruptures of the orbicularis oris, one of the ruptures in the lower lip and the other in the upper lip. It is reported that these players, after a suitable recovery period, are now playing as well or better than they did before the injury. It emphasizes the importance of the delicately balanced interplay of the muscles involved in playing a brass instrument, permit me to quote a paragraph of my book, *The Art of Brass Playing*:<sup>1</sup>

A good definition of the brass player's embouchure might be this: The mouth, lip, chin and cheek muscles, tensed and shaped in a precise and cooperative manner, and then blown through for the purpose of setting the air-column into vibration when these lips are placed upon the mouthpiece of a brass instrument. This sounds like a relatively simple definition and a condition which should not be difficult to achieve physically. But consider what this arrangement of various muscles must accomplish. First, they will have to vary their tension and conformation sufficiently to obtain a range of three or four octaves, approximately 36 to 48 different notes. Not only must these notes be well-in-tune, but they must also have good tone quality. Along with these basic requirements the embouchure is expected to have the flexibility to jump from one range of the instrument to the other lightly and quickly. But this is not all!. The embouchure is required, in conjunction with the breath, to do all these things at various dynamic levels, ranging from an extremely soft pianissimo to a loud fortissimo. Consider that these relatively small muscles must accomplish all this with the strength and endurance to continue for several hours a day and you begin to gain new respect for what appeared at first to be a simple arrangement of muscles. Although the complete embouchure is complex, it is only a composite of many individually simple muscular functions, and when these are understood and applied, perhaps very gradually one at a time, they can be assembled successfully into an excellent embouchure.

Out of curiosity I have recently tested myself with regard to the amount of pressure exerted by the mouthpiece upon my lips while playing a high C (concert F) on the horn. The test was quite simple. I pushed the mouthpiece against my lips with a postal scale and checked the pounds of pressure needed to play the high C. The scale read 5 pounds. And this was concentrated in the area of a 1-inch circle!. It is not at all uncommon to feel that the front teeth have become slightly loose or that slight cuts have opened up on the inside of the lip after a long and strenuous concert. There is no doubt that such extreme punishment of the lips can and sometimes does lead to a rupture of some area of the orbicularis oris.

Here are some thoughts relative to this problem and the consideration of surgical correction. I believe that an operation in the orbicularis oris is a very serious one to a player who depends on his or her performance for a career and must be given very careful and analytical consideration. If it is successful, it will be the beginning of a whole new career. If it fails, it could mean the end of the player's career, at least as a brass player. Therefore I believe that the operation should be considered as a last resort. If the damaged muscle still allows some semblance of reasonable performance ability, perhaps rest, or physical therapy, or even a change of equipment particularly the mouthpiece, should be considered before resorting to surgery. If the playing ability is so impaired, however, that no loss would occur even if the surgery were a failure, then the operation should be considered, since it is the only option left. And the remarkable success of the first two such operations make the operation a highly worthwhile gamble.

Owing to the differing techniques involved in playing the horn as opposed to the technique used in trumpet playing, it has been my observation that the horn player most often has the rupture on the upper lip and the trumpet player has the breach in the lower lip. This is not to imply that the rupture is a common occurrence. Thankfully, it is rather rare.

The sad fact is that this rupture of the orbicularis oris could be entirely avoided if the player used the proper technique in forming the embouchure. The embouchure- in a rather oversimplified description- is formed by a "tug-of-war" between the contracting orbicularis oris and the contracting buccinators. The feeling is rather like trying to whistle while smiling or, conversely, trying to smile while whistling. It is the tension set up by the two sets of antagonistic muscles, the orbicularis oris and the buccinators, which enables the lips to vibrate in the mouthpiece, which is then amplified by the instrument. When this is done correctly- with sufficient contraction of the orbicularis oris- the lips are in a strong position to fend off the mouthpiece pressure and to protect themselves. Contrarily, when the buccinators are too tensed and pull the lips into a pronounced smile the lips are stretched thin and become completely vulnerable to the mouthpiece pressure, very much like a cookie cutter pressing into soft dough! Worse yet, thinly stretched lips required even more pressure to achieve the same high notes that the more puckered lips could get easily on the protected, contracted orbicularis oris. Of course, this knowledge is of little help to the victim of the rupture, but it does point out the importance of using the proper techniques at the outset of study. For the player who has successful surgery of the rupture, this knowledge also could be useful in preventing future damage. The trumpet player in this second paper reported playing even better after the upper lip operation than he did before the injury. Obviously the operation was highly successful. Perhaps there is a contributing factor in this success that has not been considered heretofore. Before the operation it can be observed in Figs. 1 (right), 2 (right), and 3 (left) that there is a pronounced downward lip in the upper lip, which Dr. Planas refers to as a "beak" and which we brass players sometime refer to as a "widow's peak" of the upper lip. This results in two apertures between the upper and lower lip, on each side of the center. Note this appearance in Figs. 1 (right) and 2 (right). One cannot play between two apertures simultaneously, so the player with this problem usually resorts to excessive pressure in order to literally push this point out to existence. A "smiling" embouchure also helps to stretch this point of flesh in

merely mash this point out to existence. A smiling embouchure also helps to stretch this point of flesh in flatter condition. Both these procedures-excessive pressure and a stretched orbicularis oris-could very well have caused the rupture in the first place. When Dr. Planas performed the second-stage surgery, that of reducting the "beak" as he calls it, he may have achieved the most important improvement of all, the levelir out of the upper lip, so that it forms a fairly straight line with the lower lip, thus enabling the the player to f a single, well-shaped aperture right in the center of the lips and without the previous mashing and smiling th was so detrimental (see Fig.5).

Dr. Kaye's observation that the removal of the fibrous mass in the orbicularis oris shortened the circumference of that muscle back to its original size has great significance, I believe. In fact, this might be very well the leading factor in the successful rehabilitation of the player.

On behalf of all brass players, I would like to express gratitude to the two doctors for their interest and dedication in helping us in the solution to our most devastating problem. The gratitude of the two fortunate trumpet players who participated in the pioneering of this procedure will be multiplied many times over by brass players of the future.

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## References

1. Farkas, P. The Art of Brass Playing. Rochester, N.Y.: Wind Music, Inc., 1962.P.5

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## Discussion

### **Further Experience with Rupture of the Orbicularis Oris in Trumpet Players**

by Jaime Planas, M.D.

Discussion by Bernard L. Kaye, M.D.

"troubleshooter" for brass musicians who have playing problems, including problems with their embouchur (Embouchure- "the adjustment of the mouth and facial muscles and the positioning of the tongue and mandibule so that the lips will vibrate when blown trough."1)

The lips of a brass player are subject to high pressures, both from within and without. While playing high notes, intraoral pressures can reach as much as 130 mmHg.<sup>2</sup> Externally, pressures as high as 5 to 10 lbs mu be exerted on an area, which, for the trumpet, is not much more than 1 inch in diameter. 1 Higher notes req more pressure. Prolonged playing procedures fatigue, which, in turn, requires still more pressure. The triad prolonged playing, high notes, and fortissimo intensity is thought to predispose to injury.<sup>3</sup>

Trumpet players may be more vulnerable to rupture of their orbicularis oris than other brass players because the high pressures required. On the other hand, according to Dr. Farkas, such injuries may occur in musician who play instruments requiring less pressure, such as French horn or trombone.

Dr. Planas'operation for repair of the orbicularis oris seems relatively easy to do. He maintains a bloodless f by using lip clips. Although both this operations wear done under general anesthesia, nasal endotracheal for first operation on the lower lip and oral endotracheal for his second procedure on the upper lip, I believe the procedure also could be done under local block anesthesia. I would have thought that the resulting lip scar would have been a major impediment to playing. I am surprised and pleased to find that it is not. I am even more pleased to learn that both musicians are playing better after their operations than they did beforehand. Rupture of the orbicularis oris in a brass musician can be a serious, career-terminating occupational injury, serious as hand injury in a pianist, violinist, or a surgeon. Dr. Planas'operation offers hope and help to musicians who might otherwise have to abandon their instruments. One would think that this procedure wo be performed more frequently. Unfortunately, medicolegal restraints may be preventing the operation from becoming more popular in this country. Unless I could establish some type of strong, exculpatory agreemer with such a patient, I would feel uncomfortable about making an incision in s brass musicial's lip and explo it. I hoopoe that one day our medicolegal climate may change enough to make me feel differently. In the

meanwhile, I think I will probably continue to refer such patients to Dr. Planas and Dr. Farkas.

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### **References**

1. Farkas, p. Medical problems of wind players: A musician's perspective. *Cleve. Clin. Q.* 53:33, 1986.
  2. Bouhuys, A. Lung volumes and berthing patterns in wind-instruments players. *J. Appl. Physiol.* 19: 967, 1964.
  3. Lederman, R.J. Trumpet players neuropathy (Reply to Question). *J.A.M.A.* 257: 1526, 1987.
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