ULTRASONIC ASSISTED LIPOPLASTY (UAL) OR ULTRASONIC SUCTION ASSISTED LIPOPLASTY (USAL) SHOULD SUCTION AT A LOW PRESSURE BE A CONSECUTIVE OR A SIMULTANEOUS PROCEDURE?

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INTRODUCTION:
Since its beginnings the Ultrasonic Assisted Lipoplasty (UAL) improved by Zocchi \textsuperscript{4-5} in 1988, originated many questions to obtain a reliable technique with predictable results:

\begin{align*}
& \text{At which point does the surgeon should consider to stop an UAL..?} \\
& \text{How could the same amount of fat be liquefied on both sides..?}
\end{align*}

The answers then relied on the expertise and experience of the surgeon.

But today, using a device combining both ultrasound and simultaneous suction through a hollow cannula at low pressure, the ULTRASONIC SUCTION ASSISTED LIPOPLASTY (USAL), the plastic surgeon has a faster technique, easier to learn and perform, more reliable and predictable, and with the fewest possibilities of complications. Starting in 1993 to this date, two of the authors \textsuperscript{4-7} performed hundreds of procedures using ULTRASONIC SUCTION ASSISTED LIPOPLASTY (USAL), with an instrument considered the state-of-the-art, combining ultrasound assisted lipoplasty with simultaneous aspiration through a hollow cannula at low pressure. In 1995 the other author \textsuperscript{1} presented a technique combining in a successive sequence the SUPERFICIAL ULTRASONIC ASSISTED LIPECTOMY (SUAL) associated to the DEEP TRADITIONAL LIPOSUCTION (DTL). Accordingly, the standard of excellence today is to consider an equipment that combines ULTRASONIC SUCTION ASSISTED LIPOPLASTY (USAL) through a hollow cannula at low pressure.

MATERIAL AND METHODS:
From February 1993 to June 1997, 600 patients were treated with these devices, divided in two groups:

\textbf{Group A,} 160 patients: UAL and consecutive low suction: SMEI.
\textbf{Group B,} 440 patients: USAL, SURGITRON 2000 and 3000, EMULSIFIER R-94 GMD, and BIOING.

The results were compared.

DISCUSSION:
UAL needs three stages: a) the tumescent infiltration; b) to liquify the fat and c) the consecutive suction of the destroyed fat cells to empty the treated area.
USAL needs only two, having a hollow cannula 0.5 cm external diameter, 0.3 cm internal diameter, by 28 cm long, and emitting an effective, consistent and controllable ultrasonic energy at its tip, which would not heat beyond body temperature, and with simultaneous aspiration at low pressure by a suitable incorporated pump \textsuperscript{2-4}.

The question remained: What are the benefits of simultaneous suction when performing an ultrasonic assisted body contouring...?

We considered that:
1. The cavitation produced by UAL is relatively effective. Because of its subsequent aspiration, it keeps acting on 100\% of the already liquefied fat, emulsifying it and wasting time. The USAL avoids this “unnecessary recavitation” \textsuperscript{4-7} in over 80\% of that material, because it is already out of the anatomic space. This cuts dramatically surgical time and the period the patient is under anesthesia.
2. A cannula transmitting less energy for the constant internal flow of the treated material being aspirated, is kept cold avoiding thermal injuries to all tissues.

3. There is no risk at all of pulmonary edema, because the large volumes of water and diluted lidocaine and epinephrine which may be infused subcutaneously, are quickly suctioned.

4. There are less sensory alterations, as the hollow cannula temperature is lower compared to solid ones, allowing a our series, hyperesthesia, paresthesias and dysesthesias were just 0.5% with USAL with simultaneous aspiration (nerve sheaths are kept intact), and 6.8% with UAL and consecutive suction.

5. The USAL technique is simpler to perform and to teach, since the amount of fat removed is constantly monitored and measured. The surgeon can compare areas in opposite sides, and then decide when to stop the procedure.

6. The overall rate of complications is lower (skin necrosis, burns, fat necrosis and fibrosis, skin pigmentation) and the recovery is faster with less post-operative edema and ecchymosis. Also, an immediate skin retraction is obtained. Seroma and hematoma were 1.2% (USAL) and 6.8% (UAL).

Until 1994, it was presumed mandatory not to perform any suction while applying ultrasonic energy on the cells. Presently, most professionals admit the feasibility of simultaneous aspiration by low pressure pumps. Definitely all new equipment and technology head towards the ULTRASONIC SUCTION ASSISTED LIPOPLASTY (USAL).

Above all, the authors believe that USAL gives the PLASTIC SURGERY as a whole a safe and efficient surgical instrument for body contouring.
### SUMMARY:

<table>
<thead>
<tr>
<th>UAL</th>
<th>USAL</th>
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<tbody>
<tr>
<td><strong>GENERAL 80%</strong></td>
<td><strong>ANESTHESIA</strong></td>
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<tr>
<td><strong>LONG</strong></td>
<td><strong>TIME</strong></td>
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<td><strong>SOME</strong></td>
<td><strong>RISKS</strong></td>
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<td><strong>FEW</strong></td>
<td><strong>SENSORY ALTERATIONS</strong></td>
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<td><strong>LEARNING CURVE</strong></td>
<td><strong>TECHNIQUE</strong></td>
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<td><strong>SOME</strong></td>
<td><strong>COMPLICATIONS</strong></td>
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<tr>
<td><strong>COMPLEX</strong></td>
<td><strong>TRAINING</strong></td>
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### REFERENCES:

CASES:

Case “A”: Preop. / Postop. (5 days)

Case “B”: Preop. / Postop. (30 days)

Case “C”: Preop. / Postop. (90 days)