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The initial experience with ultrasound-assisted liposuction in treating difficult fibrous areas, such as gynecomastia, hitherto not uniformly responsive to traditional suction-assisted lipoplasty, has led to the evolution and improvement of ultrasound-assisted liposuction techniques. This prospective study examined 114 consecutive patients treated with ultrasound-assisted liposuction over a 13-month period, from September of 1996 to September of 1997. The means by which this procedure helps achieve fat contouring differs from that of suction-assisted lipoplasty. Ultrasound-assisted liposuction removes fat through a fat emulsification process termed "cavitation," whereas suction-assisted lipoplasty achieves contouring through the mechanical avulsion of fat. The technique for the use of ultrasound-assisted liposuction has changed significantly from our initial series of patients to our current technique. To optimize the benefits of both ultrasound-assisted and traditional suction-assisted lipoplasty, we use a three-stage technique consisting of infiltration, ultrasound-assisted sculpturing, and suction-assisted lipoplasty for evacuation and final contouring. This has decreased our operative time, minimized complications, and optimized our body contouring results. Data were collected intraoperatively, including treatment times, treatment volumes, and treatment areas for both suction-assisted and ultrasound-assisted lipoplasty. A total of 114 patients were treated with ultrasound-assisted liposuction between September of 1996 and September of 1997. There were 23 male patients and 91 female patients. In general, the average total volume removed with this procedure decreased by about 50 percent throughout the series, whereas the suction-assisted lipoplasty volume increased correspondingly by 50 percent. Overall, suction-assisted lipoplasty volume was approximately two times ultrasound-assisted liposuction volume in the same area. Exceptions to this include the dense fibrous areas such as the back and male breast, where aspiration volumes were approximately equal. The total ultrasound-assisted liposuction treatment times were reduced after our initial 30 patients, and suction-assisted lipoplasty times increased. Total aspiration rates in our later patients averaged 36.2 cc/per minute for ultrasound-assisted and 58.4 cc/per minute for suction-assisted lipoplasty, whose rates were approximately 1.5 to 2 times faster than for ultrasound-assisted liposuction in most areas. After using this technology in our initial series of 30 patients, it became apparent that ultrasound was not a substitute for suction-assisted lipoplasty but rather a natural complement. We have found that the marriage of the techniques enhances results and minimizes complications, such as seromas, which have been reported to be 11.4 percent with ultrasound-assisted liposuction alone and are 2.6 percent in our series.

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# Safety of Ultrasound-Assisted Liposuction: A Survey of 660 Operations.

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**BACKGROUND:** Ultrasound-assisted liposuction (UAL), although providing some advantages over tumescent liposuction (TL) and traditional or suction-assisted liposuction (SAL), has been found to have some controversial complications. We performed this study to evaluate UAL's complications and to compare UAL with the previous routine techniques for liposuction. METHODS: Six hundred sixty UALs were performed on 609 consecutive volunteers by one cosmetic surgeon. Demographic characteristics, local and systemic complications, and also severe adverse events (SAE) were registered intraoperatively and at 1, 4, and 12 weeks postoperatively. RESULTS: No SAEs were identified and only nine complications, consisting of two systemic complications (two cases of hypotension) and seven local complications (3 seromas, 3 cases of contact dermatitis, and 1 case of hemorrhage), were registered. This yields a complication incidence of 1.36%. There was no association between the number of complications and the body region, age, gender, or body mass index (BMI). CONCLUSION: Our findings are in line with others in that performing UAL using local tumescent anesthesia is a safe procedure with a very low complication rate and has remarkable advantages over other liposuction techniques (TL and SAL). In addition, there was no correlation between the incidence of complications and body region, age, gender, or BMI.

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