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Original Research Article

A Comparative Study of Liposuction Alone versus Liposuction with Abdominoplasty

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Abstract:

Background: Body contouring procedures are among the most commonly performed aesthetic surgeries. While liposuction effectively removes localized adipose tissue, it does not address abdominal muscle laxity or excess skin. In contrast, abdominoplasty corrects both soft tissue redundancy and rectus diastasis but is associated with increased operative time, postoperative pain, and recovery period. There remains a need to compare outcomes between liposuction alone and liposuction combined with abdominoplasty to guide optimal procedure selection.

Aim: To compare surgical outcomes, postoperative recovery, complication profile, and patient satisfaction between liposuction alone and liposuction with abdominoplasty.

Methods: This prospective comparative observational study was conducted at the Department of Plastic and Reconstructive Surgery, Patna Medical College and Hospital, Patna, Bihar, India, from January 2024 to June 2025. A total of 40 patients were enrolled and divided into two groups: Group A (n=20) underwent liposuction alone, and Group B (n=20) underwent liposuction combined with abdominoplasty. Data on operative time, blood loss, complications, recovery duration, and aesthetic satisfaction were collected and analyzed using SPSS version 23.0. A p-value <0.05 was considered statistically significant.

Results: Group B demonstrated significantly longer operative duration and greater intraoperative blood loss compared to Group A. Postoperative complications, including seroma and wound infection, were more frequent in the combined procedure group. Hospital stay and return to daily routine were also prolonged in Group B. However, patient and surgeon-rated aesthetic satisfaction scores were significantly higher in the liposuction with abdominoplasty group, reflecting improved abdominal contour and firmness.

Conclusion: Liposuction with abdominoplasty provides superior aesthetic outcomes but is associated with increased postoperative morbidity and longer recovery time. Liposuction alone is less invasive with quicker rehabilitation but offers limited contour correction. Procedure selection should be individualized based on patient anatomy, aesthetic expectations, and tolerance for recovery.

Recommendations: Patients should receive detailed preoperative counseling regarding aesthetic benefits versus recovery demands. Proper surgical planning, meticulous technique, and postoperative support can minimize complications and improve outcomes. Future studies with larger sample sizes and long-term follow-up are recommended.

Keywords: Liposuction; Abdominoplasty; Body Contouring; Aesthetic Surgery; Postoperative Outcomes.

Introduction

Abdominal contour deformities increasingly dominate the aesthetic desires of patients seeking body-contouring surgery. While isolated fat deposits resistant to diet and exercise are often addressed with liposuction, the presence of skin laxity and musculo-fascial diastasis may necessitate a more comprehensive approach such as abdominoplasty [1]. Liposuction alone offers the benefit of targeted adipose reduction with minimal incision burden and shorter recovery; however, it does not correct redundancy of skin or weakened abdominal musculature. Abdominoplasty, in contrast, addresses these structural issues but inherently involves higher surgical complexity and longer convalescence [2]. The integration of liposuction with abdominoplasty—frequently termed "lipo-abdominoplasty"—has therefore emerged as a hybrid technique aimed at combining the volumetric

fat removal of liposuction with the tightening and skin excision of abdominoplasty, thus offering potentially superior aesthetic results [3].

The modern literature indicates that abdominoplasty remains one of the more commonly performed body-contouring procedures, and recent practice patterns reveal a growing trend toward combining flank/abdominal liposuction with the skin-excision and fascia-plication components of abdominoplasty [4]. Indeed, a 16-year analysis found that concomitant abdominal flap liposuction increased from 18% to 25% in the recent cohort, even while complication rates declined slightly, underscoring improved technique and patient selection [4]. Simultaneously, systematic reviews of liposuction alone show a relatively lower overall complication profile than combined procedures, yet they highlight limitations when skin laxity or muscle separation are present [5].

Risk stratification is critical. Studies demonstrate that increased (BMI), larger volumes of aspirated fat, and extended operative times all correlate with higher rates of postoperative complications in both liposuction and abdominoplasty [6,7]. Particularly in post-bariatric and obese populations, abdominoplasty has yielded complication rates ranging from 9.7% to 37.4%, emphasizing the need for rigorous patient evaluation and surgical planning [8]. Given these nuances, the decision of whether to perform liposuction alone or in combination with abdominoplasty requires balancing the trade-off between aesthetic gains and surgical morbidity.

Despite the growing body of evidence, few studies have directly compared liposuction alone versus liposuction combined with abdominoplasty in a controlled manner, particularly within the Indian context. Therefore, the current study aims to compare outcomes—including operative metrics, complication rates, recovery time, and patient-satisfaction—between these two approaches in a single institution over a defined period. By offering clarity in patient selection and outcome expectations, this work seeks to provide plastic surgeons working in similar resource settings with practical data to guide decision-making.

Methodology

Study Design: This study is designed as a prospective comparative observational study.

Study Setting: The study will be conducted in the Department of Plastic and Reconstructive Surgery, Patna Medical College and Hospital, Patna, Bihar, India. All surgical procedures will be performed in standardized operation theatre conditions, and follow-up assessments will be carried out in the outpatient department of the same institution.

Study Duration: The study duration will span January 2024 to June 2025, including patient recruitment, surgical interventions, postoperative follow-up, and final data analysis.

Participants: A total of 40 participants will be included in this study. Patients who present to the plastic surgery outpatient department seeking abdominal contouring and meet the eligibility criteria will be recruited. Participants will be divided into two groups:

- **Group A:** Liposuction alone (n = 20).
- **Group B:** Liposuction with Abdominoplasty (n = 20).

Inclusion Criteria

- Adult patients aged 18–55 years.
- Patients seeking cosmetic body contouring.
- Patients with stable body weight for at least 6 months prior to surgery.
- Patients who provide written informed consent for the procedure and participation in the study.

Exclusion Criteria

- Patients with uncontrolled systemic illnesses (e.g., diabetes, hypertension).
- Patients with bleeding disorders or on long-term anticoagulant therapy.
- Individuals with previous abdominal wall surgery causing significant scarring or hernia.
- Pregnant or lactating women.
- Patients unwilling to comply with follow-up requirements.

Bias Control: To minimize selection bias, consecutive eligible patients presenting during the study period will be included. All surgeries will be performed by the same experienced plastic surgeon to reduce operator-related variability. Postoperative evaluations will be conducted using standardized scoring tools to limit observer bias.

Data Collection: Data collection will include demographic details, preoperative clinical evaluation, type and extent of procedure performed, operative time, intraoperative complications, postoperative pain scores, wound healing outcomes, duration of hospital stay, and patient satisfaction scores using a validated aesthetic outcome scale. Photographic documentation will be obtained pre- and postoperatively at standardized positions and lighting conditions.

Procedure: Patients in Group A will undergo liposuction targeting abdominal and flank fat deposits using tumescent infiltration and suction-assisted techniques. Patients in Group B will undergo liposuction followed by standard abdominoplasty, including rectus muscle plication and redundant skin excision where indicated. Postoperative care will be uniform and include

compression garments, analgesia, prophylactic antibiotics, and scheduled follow-up visits at 1 week, 1 month, 3 months, and 6 months.

Statistical Analysis: Data will be compiled and analyzed using (SPSS) Software, Version 23.0. Categorical variables will be expressed as frequencies and percentages, while continuous variables will be expressed as mean ± standard deviation (SD). Comparisons between the two groups will be performed using the Chi-square test for categorical variables and the Independent t-test for continuous variables. A p-value < 0.05 will be considered statistically significant.

Results

A total of 40 patients were included in the study, with 20 patients in Group A (Liposuction alone) and 20 patients in Group B (Liposuction with Abdominoplasty). All participants completed the required postoperative follow-up of 6 months.

Table 1: Demographic Characteristics of Participants

Variable	Group A (Liposuction Only) (n = 20)	Group B (Liposuction + Abdominoplasty) (n = 20)	p-value
Mean Age (years)	32.6 ± 6.4	35.1 ± 7.2	0.281
Gender (Female %)	17 (85%)	18 (90%)	0.640
Mean BMI (kg/m²)	27.2 ± 2.8	29.4 ± 3.1	0.019*

The mean BMI was significantly higher in Group B (p = 0.019), suggesting patients undergoing abdominoplasty tended to have more abdominal redundancy. Age and gender distribution between the groups were comparable.

Table 2: Operative Metrics

Parameter	Group A (n = 20)	Group B (n = 20)	p-value
Mean Operative Time (minutes)	95.4 ± 12.3	168.6 ± 18.9	<0.001*
Mean Intraoperative Blood Loss (mL)	122.5 ± 28.7	234.7 ± 45.5	<0.001*
Day of Ambulation (post-op)	1.1 ± 0.4	2.3 ± 0.6	<0.001*

Group B experienced longer operative times, higher blood loss, and delayed ambulation, which is expected due to the more extensive surgical dissection involved in abdominoplasty.

Table 3: Postoperative Complications

Complication	Group A (n = 20)	Group B (n = 20)	p-value
Seroma	1 (5%)	4 (20%)	0.150
Wound Infection	0 (0%)	2 (10%)	0.147
Hematoma	1 (5%)	1 (5%)	1.000
Total Complications	2 (10%)	7 (35%)	0.034*

Complications were significantly more frequent in Group B (p = 0.034). Seroma and wound infection rates were notably higher in the abdominoplasty group, consistent with literature showing increased wound burden and dissection area.

Table 4: Hospital Stay and Recovery

Parameter	Group A (n = 20)	Group B (n = 20)	p-value
Mean Hospital Stay (days)	1.4 ± 0.7	4.9 ± 1.2	<0.001*
Return to Routine Activity (days)	10.2 ± 3.1	18.6 ± 4.7	<0.001*

Patients undergoing abdominoplasty required significantly longer hospital stays and delayed return to daily routine, highlighting greater recovery demands of the combined procedure.

Table 5: Patient Satisfaction (6-Month Follow-Up)

Outcome Measure	Group A (n = 20)	Group B (n = 20)	p-value
Aesthetic Satisfaction Score (0–10)	7.1 ± 1.3	8.6 ± 1.1	0.001*
Improvement in Abdominal Contour (Surgeon Rating, 0–10)	6.9 ± 1.5	9.1 ± 0.9	<0.001*

Group B demonstrated higher patient satisfaction and improved aesthetic contour, indicating that when patients accept a longer recovery and higher complication risk, the combined procedure offers superior cosmetic outcomes.

Summary of Findings

- Liposuction + Abdominoplasty results in better overall cosmetic improvement and higher patient satisfaction.
- The combined procedure is associated with greater operative time, higher postoperative morbidity, and longer recovery.
- Liposuction alone offers faster recovery and fewer complications but with comparatively less abdominal contour correction.

Discussion

In this comparative observational study involving 40 patients, two groups were evaluated—Group A, which underwent liposuction alone, and Group B, which underwent liposuction combined with abdominoplasty. The baseline demographic variables, including age and gender distribution, were comparable between the groups. However, patients in Group B demonstrated a higher mean BMI, suggesting that individuals opting for abdominoplasty typically presented with more significant abdominal laxity and redundant tissue. This indicates that patient selection inherently reflects the anatomical contouring needs.

Operative parameters showed notable differences between the two groups. Patients in Group B had significantly longer operative times and higher intraoperative blood loss, which aligns with the added complexity of tissue dissection, fascial plication, and skin excision in abdominoplasty. Additionally, patients undergoing the combined procedure exhibited delayed ambulation, reflecting the greater postoperative discomfort and need for longer recovery supervision. These findings reinforce that abdominoplasty requires more operative planning, higher surgical effort, and intensive immediate postoperative monitoring.

Postoperative complications were observed to be more frequent in Group B, with higher rates of seroma formation and wound infection. Although most complications were manageable and not life-threatening, the increased incidence correlates with the more extensive surgical trauma and larger wound surface area associated with abdominoplasty. In contrast, Group A exhibited fewer complications overall, making liposuction alone a safer and less morbid option from a recovery standpoint.

The duration of hospital stay and return to normal activity differed significantly between the groups. Patients undergoing liposuction alone had a shorter hospital stay and quicker functional recovery, demonstrating the minimally invasive nature of the procedure. Conversely, Group B required prolonged hospitalization and later return to routine activities due to greater postoperative pain and need for wound care. Despite the increased morbidity and downtime, patients in Group B reported higher satisfaction scores and superior aesthetic outcomes, particularly with respect to abdominal contour and firmness.

In summary, while liposuction with abdominoplasty provides a more dramatic and aesthetically superior result, it is associated with greater operative demands, higher complication rates, and longer recovery time. Liposuction alone, although offering a safer and faster recovery, may be more suitable for patients with good skin elasticity and minimal abdominal muscle laxity. These findings highlight the importance of individualized preoperative assessment and patient counseling to balance aesthetic goals with postoperative expectations and tolerance for recovery.

Recent studies have consistently shown that combining liposuction with abdominoplasty provides superior aesthetic, functional, and psychological outcomes compared to liposuction alone. Leão et al. (2019) demonstrated that the combination of abdominoplasty with correction of rectus diastasis resulted in better abdominal wall contour and improved patient satisfaction due to enhanced core integrity and aesthetic improvement [9]. Similarly, Sterodimas et al. (2020) confirmed that concurrent liposuction and abdominoplasty can be performed safely without significantly increasing the risk of complications such as seroma, hematoma, or wound dehiscence, provided that meticulous surgical technique and postoperative management are followed [10].

Matarasso et al. (2021) emphasized that patients who underwent the combined procedure reported higher satisfaction levels and better psychological well-being, largely attributed to the tighter and more harmonious body silhouette achieved [11]. In addition, Mendieta et al. (2019) observed functional benefits, including improved posture and reduction in lower back pain, following abdominoplasty with rectus plication compared to liposuction alone, which lacked such core stability improvements [12].

Further supporting these findings, Liew et al. (2020) noted that the combined technique improved patient-reported quality of life and physical activity tolerance, demonstrating that the benefits extend beyond aesthetics [13]. Moreover, Cárdenas-Camarena et al. (2021) found that the inclusion of abdominoplasty with liposuction produced superior waist-to-hip ratios and greater satisfaction in postoperative contouring assessments without raising complication rates significantly [14]. Overall, evidence suggests that liposuction combined with abdominoplasty not only enhances aesthetic outcomes but also improves functional stability and patient satisfaction, making it a preferred choice for comprehensive abdominal contouring.

Conclusion

Liposuction combined with abdominoplasty offers superior aesthetic outcomes and higher patient satisfaction compared to liposuction alone; however, it is associated with longer operative time, greater postoperative morbidity, and prolonged recovery. Liposuction alone remains a safer option with quicker rehabilitation but may provide less contour improvement. Therefore, procedure selection should be individualized based on patient anatomy, expectations, and tolerance for recovery demands.

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