To evaluate the risks associated with Deep Inferior Epigastric Perforator (DIEP) flap surgery.

To assess disparities in postoperative outcomes, including hospitalization rates.

To delineate comprehensive risk profiles across different racial groups.

To discuss the implications of the observed racial disparities in DIEP flap surgery outcomes and propose tailored postoperative management strategies to address these disparities.

Research Objectives

1. To evaluate the risks associated with Deep Inferior Epigastric Perforator (DIEP) flap procedures.
2. To delineate comprehensive risk profiles across different racial groups undergoing DIEP flap reconstruction.
3. To analyze operative duration, hospital stay, surgical site infection (SSI) rates, and 30-day reoperation and readmission rates among African American, Hispanic-White, and White patients undergoing DIEP flap surgery.
4. To assess disparities in postoperative outcomes, including hospitalization duration, total operation time, time to discharge, occurrence of superficial surgical site infections, and days from operation to SSI complication, across different racial groups.
5. To discuss the implications of the observed racial disparities in DIEP flap surgery outcomes and propose tailored postoperative management strategies to address these disparities.

Methods

We analyzed DIEP flap procedures (CPT 19364) from the National Surgical Quality Improvement Program (NSQIP) database, spanning 2007-2022. The cohort of 12,730 patients was categorized by race—African American (2193), Hispanic-White (922), and White (9615). Evaluated parameters included operative duration, hospital stay, surgical site infection (SSI), and 30-day reoperation and readmission rates.

Results

- African American patients experienced longer median hospital stays compared to White patients (p < 0.01) (Figure 1).
- Disparities across ancestries were also evident in total operation time and time to discharge (p < 0.001), as well as in occurrences of superficial surgical site infection (SSI) (p < 0.01), and days from operation to SSI complication (p < 0.01) (Data Table 1).

Data Table 1. Measure of outcome variance across ancestries

<table>
<thead>
<tr>
<th>Measure of Outcome</th>
<th>Variance between Ancestries</th>
<th>p Value</th>
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</thead>
<tbody>
<tr>
<td>Preop Transfusion of ≥1 unit of whole/packed RBCs in 72 hours prior to surgery</td>
<td>0.0031382716</td>
<td>0.0001241395804</td>
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<tr>
<td>Total operation time</td>
<td>0.002654419318</td>
<td>0.002518072767</td>
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<tr>
<td>Time to discharge</td>
<td>0.002302250843</td>
<td>0.001192199054</td>
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<tr>
<td>Occurrence of Superficial Surgical Site Infection</td>
<td>0.0025020864</td>
<td>0.04801141927</td>
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<tr>
<td>Occurrence of Pneumonia</td>
<td>0.0073709974</td>
<td>0.03997376844</td>
</tr>
</tbody>
</table>

Limitations

- Data Source Limitations: The study relies on data from the National Surgical Quality Improvement Program (NSQIP) database, which may have inherent limitations such as potential inaccuracies or missing data.
- Sample Size and Representation: While the study includes a substantial sample size of 12,730 patients, there may be variations in sample representation across different racial groups, potentially affecting the reliability of comparisons.
- Confounding Factors: The analysis may not fully account for all potential confounding variables that could influence postoperative outcomes, such as socioeconomic status, access to healthcare, comorbidities, or surgeon expertise.

Conclusions

- Preliminary findings indicate significant racial disparities in DIEP flap surgery outcomes.
- African Americans faced longer hospitalization, suggesting the need for tailored postoperative management.
- Understanding the underlying reasons for extended hospital durations is imperative, as they carry significant socioeconomic implications, including delayed return to work and potential financial strain.
- Understanding these disparities is crucial to improving surgical care and ensuring equitable health outcomes for all racial groups.