

Supplementary Table S2. Summary of articles on abdominal-based flaps

Citation	Flap(s) Included	Study Methods	Bed Rest	Mobilization Protocol	Conditional sitting details	Start of full pressure sitting	Discharge†	Complication Rate and Specific Complications
Pérez-García et al. (2022)	eVRAM myocutaneous flaps	Retrospective review of 44 patients	• Timing: NR • Surface: Low air-loss pressure mattress • Position: Supine, thighs slightly abducted; or lateral decubitus (if sacral involvement)	Early standing and ambulation are permitted in most cases	NR	3 weeks	• LOS: 3 weeks • Follow-Up: 4.8 years (minimum 1 year)	Total: 38.60% Flap necrosis (6.8%) Hematoma (2.3%) Dehiscence (9.1%) Infection (13.6%) Hernia (2.3%)
Harries et al. (2021)	VRAM myocutaneous flaps	Retrospective review of 178 patients	• Timing: 7 days • Surface: NR • Position: Lateral	Early standing	NR	NR	• LOS: NR • Follow-Up: 44.1 months (0.2-116.5)	Total: 28.6% Flap necrosis (4%) Dehiscence (3.4%) Infection (21.3%) Hernia (6.7%)

LaBove et al. (2020)	VRAM myocutaneous flaps	Retrospective review of 28 patients	• Timing: 3-10 days postoperatively (up to 14 days) • Surface: Air mattress with abduction pillows, pillow under sacrum • Position: Lateral, turn every 2 hours	NR	• Start POD 3-5 – 1-2 hours at a time • Donut	4-6 weeks	• LOS: 4-6 weeks • Follow-Up: NR	Total: 14.3% Partial Flap necrosis (14.3%) Infection (3.6%) Hernia (3.6%)
Horch et al. (2020)	VRAM myocutaneous flaps	Retrospective review of 361 patients	• Timing: NR • Surface: NR • Position: NR	NR	• Start 3 weeks • Unspecified graduated sitting protocol	6 weeks	• LOS: 6 weeks • Follow-Up: NR	NR
Warbrick-Smith et al. (2018)	VRAM myocutaneous and muscle flaps	Protocol Discussion	• Timing: 3-5 days • Surface: NR • Position: Lateral	NR	Gradually build starting with 30-minute intervals	3 weeks	• LOS: 3 weeks • Follow-Up: NA	NR

Wang et al. (2016)	VRAM myocutaneous flaps	Retrospective review of 47 patients	• Timing: 3 days • Surface: Air-fluidized bed • Position: NR	NR	NR	4-6 weeks	• LOS: 4-6 weeks • Follow-Up: 1.3 years (7 days – 4.9 years)	Total: 61.7% Hematoma (2.1%) Dehiscence (40.4%) Infection (17%)
Lefevre et al. (2009)	VRAM myocutaneous flaps	Retrospective review of 43 patients	• Timing: 10 days • Surface: NR • Position: lateral alternating	NR	NR	POD15	• LOS: POD15 • Follow-Up: 25.9 months (1.5-174.3)	Total: 30% Hernia (16.8%)
Butler et al. (2008)	VRAM myocutaneous flaps	Retrospective review of 35 patients	• Timing: 1 day • Surface: pillow under sacrum • Position: NR	NR	First two weeks postoperatively: sit with weight on the lateral gluteal and ischial regions only	2 weeks	• LOS: 2 weeks • Follow-Up: 3.2 ± 2.3 years	Total: 46% Infection (9%) Dehiscence (9%)

Tei et al. (2004)	VRAM myocutan eous flaps	Retrospe ctive review of 14 patients	• Timing: 10 days • Surface: NR • Position: Wedge cushion between legs	NR	NR	2 weeks	• LOS: 2 weeks • Follow-Up: 14.5 months (3-41)	Total: 17% Flap necrosis (0%)
Weidlich et al. (2024)	VRAM myocutan eous flap	Retrospe ctive Review of 27 patients	• POD0	Standing and walking as tolerated	NR	NR	• LOS: • Follow-Up: 27 months (1- 100	Total: 81.5% Wound healing or infection (63%) Hematoma (22%)

† Mean ± Standard Deviation or Median (Range)
Post-Operative Day (POD); Not Reported (NR); Vertical Rectus Abdominal Myocutaneous (VRAM); Inferior Gluteal Artery Perforator (IGAP); Superior Gluteal Artery Perforator (SGAP); Anterolateral Thigh (ALT); Profunda Artery Perforator (PAP); Internal Pudendal Artery Perforator (IPAP)

Supplementary Table S3. Summary of articles on gluteal-based flaps

Citation	Flap(s) Included	Study Methods	Bed Rest	Mobilization Protocol	Conditional sitting details	Start of full pressure sitting	Discharge†	Overall Complication Rate
Holm et al. (2007)	IGAP fasciocutaneous flaps	Retrospective review of 28 patients	• Timing: 1 day • Surface: Bed • Position: Up to 30-degree flexion hip joints	• POD2 stand with tip board • POD3 few steps with 45° flexion of hip joints • POD6 stand without tip board, 60° flexion • POD7 extended walking	• Start POD14 -30 mins 3x/day • POD17 -60 mins 3x/day • POD20-gradually extend periods	2 weeks	• LOS: NR • Follow-Up: 16 months (1-45)	Total: 14% Infection (3.6%)
Alke Pai et al. (2022)	IGAP adipofasciocutaneous flaps	Case series of 27 flaps	• Timing: 0 days • Surface: NR • Position: Lateral	No restrictions	NR	NR	• LOS: 33.33% stayed <2 weeks, 66.66% stayed >2weeks • Follow-Up: 1 year	• Minor complication rate: 25.9% • Early major complication rate: 14.8% Infection (3.7%) Dehiscence (11.1%)

Khalil et al. (2022)	IGAP fasciocutaneous flaps	Case Series of 31 flaps	• Timing: 2-3 days • Surface: NR • Position: Alternating lateral and prone	• 2-3 days: walk • 14 days: stairs	• Start POD7 - 15 mins 2-3x/day • Valley pressure-relieving cushion	NR	• LOS: 13 days (8-29) • Follow-Up: 6-18 months (1-45)	Total: 16% Dehiscence + Infection (9.6%)
Hainsworth et al. (2012)	IGAP fasciocutaneous flaps	Retrospective review of 40 patients	• Timing: 1 day • Surface: NR • Position: Lateral or prone 24h	NR	NR	POD5	• LOS: 14 days (6-140) • Follow-Up: 9 months (3-28)	Total: 15.6% Infection (9%)
Johal et al. (2022)	IGAP fasciocutaneous flaps	Retrospective review of 22 patients	• Timing: 2 days • Surface: Nursed side to side for 48 hours • Position: Alternate lateral decubitus	NR	• Start POD5 - 5-minute graduated intervals • Pressure relieving cushion	NR	• LOS: 15.9 days (8-47) • Follow-Up: 13.6 months (0.25 – 62.7)	Minor: 36% Includes infection, dehiscence, or drainage

Thiel et al. (2023)	IGAP adipofasciocutaneous V-Y advancement flaps	Retrospective review of 29 patients	• Timing: POD0 • Surface: NR • Position: supine positioning was allowed for 5 days postop	NR	Start POD6	POD6	• LOS: 11.24 days • Follow-Up: 1 year	Infection (19%)
Chrelias et al. (2023)	SGAP and IGAP fasciocutaneous propellor flaps	Case series of 23 flaps	• Timing: Until POD2 • Surface: NR • Position: prone and alternate lateral decubitus	NR	Start 1 week	NR	• LOS: POD 15 • Follow-Up: NR	Flap complication (15%)
Wagstaff et al. (2009)	SGAP and IGAP fasciocutaneous	Case Series of 11 SGAP and 3 IGAP flaps	• Timing: 0 days • Surface: NR • Position: contralateral side for 4 weeks	NR	NR	NR	• LOS: NR • Follow-Up: 18 months (6-48)	Minor dehiscence (28.6%)

Kreisel et al. (2023)	SGAP fasciocutaneous	Retrospective review of 27 patients	• Timing: NR • Surface: NR • Position: NR	NR	NR	• VY/SGAP: 1 week • Turnover: No restrictions	• LOS: 9 days (IQR 6-18) • Follow-Up: 18 months (6-34)	Total: 33% Dehiscence (22%) Infection (22%)
Khoury et al. (2022)	IGAP fasciocutaneous	Remobilization protocol and discussion	• Timing: 1-2 days • Surface: NR • Position: not supine	• POD 2–3: short periods of standing with leg moving • POD6: stairs	• Start POD3 – 10 minutes every hour • POD4:20 mins every hour • Soft cushion	POD6	• LOS: POD7 • Follow-Up: NR	NR

† Mean ± Standard Deviation or Median (Range)
Post-Operative Day (POD); Not Reported (NR); Vertical Rectus Abdominal Myocutaneous (VRAM); Inferior Gluteal Artery Perforator (IGAP); Superior Gluteal Artery Perforator (SGAP); Anterolateral Thigh (ALT); Profunda Artery Perforator (PAP); Internal Pudendal Artery Perforator (IPAP)

Supplementary Table S4. Summary of articles on perineal-based flaps

Citation	Flaps Included	Study Methods	Bed Rest	OOB Mobilization	Conditional sitting – Start Time	Full pressure Sitting - Start Time	Discharge†	Overall Complication Rate
Chasapi et al. (2018)	Perineal turnover fasciocutaneous flaps	Retrospective review of 14 patients	• Timing: NR • Surface: NR • Position: Nursed on opposite of the flap side. Supine lying avoided 2 weeks	NR	NR	POD14	• LOS: NR • Follow-Up: 14.1 months	Total: 15.4% Flap loss (0%) Dehiscence (7.2%) Hernia (7.2%)
de Araujo et al. (2024)	IPAP fasciocutaneous flaps	Randomized clinical trial with 51 patients (25 with early mobilization protocol, 26 with bed rest protocol)	EM: • Timing: immediately as tolerated • Surface: NR • Position: Adduction BR: • Timing: 5 days • Surface: NR • Position: Adduction	NR	NR	EM: NR BR: POD14-21	EM: • LOS: 11.5 days • Follow-Up: 90 days BR • LOS: 18.46 days • Follow-Up: 90 days	EM: 68% Partial flap necrosis (8%) Hernia (4%) Dehiscence (52%) BR: 80.8% Partial flap necrosis (7.7%) Hernia (0%) Dehiscence (76.9%)

Coltro et al. (2017)	IPAP fasciocutaneous flaps	Prospective study of 73 patients	• Timing: 5 days • Surface: NR • Position: Adduction	NR	Unspecified graduated protocol	POD14-21	• LOS: 15.94 ± 15.11 days (5–110) • Follow-Up: 16.27 ± 10.42 months (1–42)	Total: 48% Flap necrosis (4%) Dehiscence (37%) Infection (10%)
Coltro et al. (2014)	IPAP fasciocutaneous flaps	Prospective study of 25 patients	• Timing: 5 days • Surface: NR • Position: Adduction	NR	NR	POD14	• LOS: 13.7 days (5–40) • Follow-Up: 15 months (12–18)	Total: 40% Flap necrosis (4%) Dehiscence (28%) Infection (4%)
Hellinga et al. (2015)	Lotus petal fasciocutaneous flaps	Retrospective review of 28 patients	• Timing: 1 week • Surface: Air-fluidized bed • Position: NR	NR	Sitting during transfers only	3 weeks	• LOS: NR • Follow-Up: 22.7 months (11.0–49.5)	Total: 78.5% Flap necrosis (17.8%) Dehiscence (39.3%) Infection (7.1%)

† Mean ± Standard Deviation or Median (Range)

Post-Operative Day (POD); Not Reported (NR); Vertical Rectus Abdominal Myocutaneous (VRAM); Inferior Gluteal Artery Perforator (IGAP); Superior Gluteal Artery Perforator (SGAP); Anterolateral Thigh (ALT); Profunda Artery Perforator (PAP); Internal Pudendal Artery Perforator (IPAP)

Supplementary Table S5. Summary of articles on thigh-based flaps

Citation	Flap(s) Included	Study Methods	Bed Rest	OOB Mobilization	Conditional sitting – Start Time	Full pressure Sitting - Start Time	Discharge†	Overall Complication Rate
Perrault et al. (2020)	ALT myocutaneous flap	Retrospective review of 23 patients	• Timing: 0 days • Surface: NR • Position: NR	NR	NR	2 weeks	• LOS: NR • Follow-Up: NR	Total: 39% Dehiscence (26.1%) Infection (4.4%)
di Summa et al. (2016)	ALT (Transabdominal -pelvic-perineal TAPP) fasciocutaneous flaps	Retrospective review of 6 patients	• Timing: POD2 • Surface: NR • Position: Ventral decubitus alternated with lateral decubitus	• POD3 - stand • POD 7 - walk	Start with 15 minutes three times per day, gradually extend	POD14	• LOS: 42 days (10-95) • Follow-Up: 21 months (6-54)	Total: 33% Hernia (0%)
Khoury et al. (2024)	Gracilis myocutaneous flaps	Retrospective review of 21 patients	• Timing: 3 days • Surface: NR • Position: NR	NR	NR	NR	• LOS: 4-5 days • Follow-Up: 55 months (IQR 23-82)	NR

DeLozier et al. (2023)	Gracilis fasciocutaneous flaps	Retrospective review of 45 patients	• Timing: POD0 • Surface: NR • Position: NR	NR	NR	POD3	• LOS: 17 days (11.5-22) • Follow-Up: NR	Total: 44% Hematoma (0%) Infection (6.6%) Dehiscence (33.4%)
Zhang et al. (2022)	Gracilis adipofascial flaps	Retrospective review of 31 patients	• Timing: 1 day • Surface: NR • Position: NR	NR	NR	NR	• LOS: NR • Follow-Up: 4-12 months	Total: 25.8%
Coelho et al. (2019)	Gracilis myocutaneous flaps	Retrospective review of 25 patients	• Timing: Immediately as tolerated • Surface: Low air-loss mattress • Position: Lateral	As tolerated	Alternate pressure between buttocks	POD1	• LOS: 14 days (6–60) • Follow-Up:	28% Infection (20%) Dehiscence (16%) Hematoma (8%)
Singh et al. (2016)	Gracilis muscle flaps	Retrospective review of 40 patients	• Timing: NR • Surface: NR • Position: Avoid leg abduction until healed (3-4 weeks)	NR	NR	3-4 weeks	• LOS: 13 days • Follow-Up:	Total: 52.5% Flap loss (2.5%) Infection (10%) Dehiscence (25%)

Chong et al. (2015)	Gracilis muscle flaps	Retrospective review of 16 patients	• Timing: 2 days • Surface: NR • Position: POD1	NR	NR	NR	• LOS: 13 ± 6 days • Follow-Up:	Total: 25%
Kaartinen et al. (2015)	Gracilis myocutaneous flaps	Retrospective review of 12 patients	• Timing: 1 day • Surface: NR • Position: NR	NR	NR	1 week	• LOS: NR • Follow-Up:	Total: 8.3%
Ducic et al. (2008)	Gracilis myocutaneous flaps	Retrospective review of 15 patients	• Timing: POD0 • Surface: NR • Position: NR	NR	NR	NR	• LOS: NR • Follow-Up:	Total: 5% Infection (5%)
Friedman et al. (2010)	Posterior thigh fasciocutaneous flaps	Retrospective review of 19 patients	• Timing: POD1 • Surface: Pressure-reducing mattress • Position: NR	NR	• Start POD 14-21 • Unspecified graduated protocol	NR	• LOS: NR • Follow-Up: 1 year	Total: 53%

Lavie et al. (2024)	vPAP fasciocutaneous flaps	Retrospective review of 10 patients	• Timing: 3 weeks • Surface: Air-fluidized mattress • Position: No pressure on flap	NR	• NR	3 weeks	• LOS: NR • Follow-Up: 26.1 ± 14.4	Total: 80% Partial Flap Necrosis (20%) Dehiscence (50%) Infection (20%)
Arquette et al. (2022)	PAP fasciocutaneous flaps	Retrospective review of 15 patients	• Timing: 1 day • Surface: Air-fluidized mattress • Position: NR	NR	• Start 2 weeks • Graduated pressure increases for 4 weeks	NR	• LOS: NR • Follow-Up: NR	53.3% Dehiscence (40%) Infection (13.3%)

† Mean ± Standard Deviation or Median (Range)
Post-Operative Day (POD); Not Reported (NR); Vertical Rectus Abdominal Myocutaneous (VRAM); Inferior Gluteal Artery Perforator (IGAP); Superior Gluteal Artery Perforator (SGAP); Anterolateral Thigh (ALT); Profunda Artery Perforator (PAP); Internal Pudendal Artery Perforator (IPAP)

Supplementary Table S6. Summary of articles on flaps from multiple regions

Citation	Flap(s) Included	Study Methods	Bed Rest	OOB Mobilization	Conditional sitting – Start Time	Full pressure Sitting - Start Time	Discharge†	Overall Complication Rate
Merikli et al. (2016)	ALT fasciocut aneous, gracilis myocutan eous, gluteal myocutan eous, and VRAM	Case series of 45 patients	• Timing: POD0 • Surface: Low- pressure bed • Position: Alternating supine and lateral recumbent	NR	• 3 weeks • Graduated protocol for 3 weeks	6 weeks	• LOS: NR • Follow-Up: 6 months or greater	Total: 20-31%
Gentiles chi et al. (2016)	Thigh- based fasciocut aneous V-Y, gracilis myocutan eous V- Y, VRAM, ALT fasciocut aneous, lotus petal	Retrospe ctive review of 101 flaps	• Timing: 1 week • Surface: NR • Position: NR	NR	NR	NR	• LOS: NR • Follow-Up: NR	Total: 17.80% Flap necrosis (0%) Wound dehiscence (5.9%) Infection (4%)

Calotta et al. (2018)	VRAM, Gracilis muscle, and ALT fasciocutaneous flaps	Retrospective review of 54 patients (23 bedrest, 31 early ambulation)	BR: • Timing: 3 days • Surface: NR • Position: NR ERAS: • Timing: 0 days • Surface: NR • Position: NR	ERAS only: • POD0 – chair • POD1 – walk	NR	NR	BR: • LOS: 13.1 days (IQR 7-17) • Follow-Up: 19 months (mean) EAC: • LOS: 7.9 days (IQR 5-12) • Follow-Up: 15 months (mean)	60 day major complications: BR: 42% Reoperation (26.1%) EAC: 27% (9.7%) Minor complications: BR: 38% Partial necrosis (4.3%) Hematoma (4.3%) Dehiscence (34.8%) Infection (8.7%) EAC: 9% Partial Necrosis (3.2%) Dehiscence (12.9%) Infection (12.9%) Hematoma (0%)
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Baird et al. (2020)	VRAM and IGAP myocutaneous flaps	Retrospective review	• Timing: NR • Surface: NR • Position: Nursed side-side while supine	Strict mobilization protocol with unspecified details	NR	NR	• LOS: 17 days (11-99) • Follow-Up: NR	46.40% Flap necrosis (11.4%) Infection (23%) Hernia (11%)
Benedict et al. (2023)	VRAM and IGAP fasciocutaneous flaps	Retrospective review of 116 patients	• Timing: 2 days • Surface: NR • Position: Supine with wedge, turn every 2 hours	NR	• Start POD3-4 – 15-minute intervals up to three times daily	POD5	• LOS: 13.3 days (range 1–210 days) • Follow-Up: 8.03 months (0-37.8)	Total: 49-57% Dehiscence (18.5%) Infection (19.0%) Hernia (9.5%)

† Mean ± Standard Deviation or Median (Range)
Post-Operative Day (POD); Not Reported (NR); Vertical Rectus Abdominal Myocutaneous (VRAM); Inferior Gluteal Artery Perforator (IGAP); Superior Gluteal Artery Perforator (SGAP); Anterolateral Thigh (ALT); Profunda Artery Perforator (PAP); Internal Pudendal Artery Perforator (IPAP)