

- A**
- Abdominal aorta, 20
- Anastomosis, 8, 27, 101, 104, 168, 172, 212, 218, 230, 233, 264, 268, 396, 412
- anterior, 7, 103, 123, 144
 - aortic, 416, 421
 - coronary, 377–378, 380
 - end-to-end, 421, 426, 427, 462
 - extracardiac direct, 24–25
 - posterior, 7, 28, 120, 143
 - primary, resection and, 425–427
 - side-to-side, 126
- Aneurysm, 176, 374, 400–401, 441–443
- coronary artery, 385
- Aneurysmal right pulmonary artery, 177
- Angioplasty, balloon, closed, 129. *See also* Coarctation of aorta
- Annulus, 244, 251, 269, 279
- common, 194, 197
 - pulmonary valve, 82, 146, 151, 155, 158, 160, 180, 183, 186, 190
 - tricuspid valve, 29–30, 32, 34, 87, 130, 136, 400
 - truncal valve, 351, 353
- Anomalous collateral arteries, multiple, recruitment of, 208–213
- Anomalous left upper lobe pulmonary venous connection, with intact atrial septum, 25–27
- Anomalous mitral valve papillary muscle, 254–255
- Anomalous origin of left coronary artery
- coronary artery origin from right pulmonary artery, 378–381
 - direct re-implantation as repair for, 374–378
 - intrapulmonary artery tunnel as repair for, 369–374
- Anomalous ostium and intramural coronary artery, 382–384
- Anomalous papillary muscle extension, 254, 255
- Anomalous pulmonary veins, 15, 16, 17, 18, 20, 21, 22, 221, 224
- Anomalous pulmonary venous connection, total
- intracardiac to coronary sinus, 225–227
 - intracardiac to right atrium, 223–225
 - subdiaphragmatic, 228–230
 - supracardiac, 214–219
 - supracardiac at superior vena cava to right atrial junction, 220–223
- Anomalous systemic venous return, 1–8
- left superior vena cava draining to roof of left atrium, 2–4
 - right superior vena cava draining to roof of left atrium, 4–8
- Anterior-posterior window, 371, 372, 393
- Aorta, 15, 66, 171, 193, 195, 289, 382, 450. *See also* Coarctation of aorta
- abdominal, 20
 - ascending, 27, 97, 101, 124, 125, 126, 128, 143–144, 165, 166, 168, 169, 170, 171, 172, 177–181, 183, 188, 201, 220, 228, 259, 263, 265, 275, 282, 283, 286, 287, 288, 297, 298, 313, 316, 319, 322, 344, 348, 349, 355, 362, 363, 364, 365, 369, 374, 378, 380, 385, 388, 393, 395, 397, 402, 405, 409, 413, 416, 420, 423, 454, 456, 457, 461, 462
 - descending, 210, 212, 404, 405, 413, 415, 417–420, 423, 441, 451
 - native, 281
 - proximal ascending, 83, 84, 246, 254, 275, 398
 - thoracic, 417, 419
- Aortic anastomosis, 416, 421
- Aortic arch, 425, 426, 427, 428, 430, 431, 433, 436, 437, 439, 456
- double, 451–454
 - interrupted, 415–416
 - transverse, 415
- Aortic atresia and hypoplastic left heart syndrome: Norwood procedure with Blalock shunt, 402–414
- Aortic cannula, 288, 406
- Aortic cannulation, 171
- Aortic homograft, 184
- Aortic homograft-valved conduit, 348–353
- Aortic insufficiency, 9
- Aortic isthmus, 427, 428
- Aorticopulmonary window, 393–394
- Aortic origin of pulmonary artery, 395–396
- Aortic root anomalies
- anomalous origin of left coronary artery, 369–381
 - anomalous ostium and intramural coronary artery, 382–384
 - aortic atresia and hypoplastic left heart syndrome: Norwood procedure, 402–414
 - aorticopulmonary window, 393–394
 - aortic origin of pulmonary artery, 395–396
 - coronary artery fistula, 385–392
 - left ventricle to aortic tunnel, 397–399
 - Sinus of Valsalva aneurysm, 400–401
- Aortic root enlargement procedures: posterior root enlargement, 268–281
- Aortic suture line, 345
- Aortic tunnel, 397–399
- Aortic valve, 11, 77, 82, 83, 86, 189, 190, 193, 196, 199, 247, 251, 256, 260, 266, 308, 317, 397, 398, 399
- cusps of, 82, 261, 268, 271, 275, 276
 - leaflets of, 81, 264, 279, 401
- Aortic wall, 85
- Aortopexy, 371, 453, 454, 456, 457

- Aortotomy, 170, 257, 268, 269, 271, 272, 274, 275, 277, 278, 283, 344, 350, 370, 376, 396, 401, 404, 405, 420, 429, 431
- Apical left ventricle to ascending aorta conduit, 282–284
- Arch, 287. *See also* Aortic arch
distal, 444, 447, 451–453
proximal, 454
right, left ligamentum with, 455–462
transverse, 402
- Arrhythmias, 9
- Arterial cannula, 409
- Arterial switch: Jatene operation, 285–307
- Arteries. *See* Specific arteries
- Arteriectomy, 102, 126, 131, 170, 197, 311, 371
- Ascending aorta, 27, 97, 101, 124, 125, 126, 128, 143–144, 165, 166, 168, 169, 170, 171, 172, 177–181, 183, 188, 201, 220, 228, 259, 263, 265, 275, 282, 283, 286, 287, 288, 297, 298, 313, 316, 319, 322, 344, 348, 349, 355, 362, 363, 364, 365, 369, 374, 378, 380, 385, 388, 393, 395, 397, 402, 405, 409, 413, 416, 420, 423, 454, 456, 457, 461, 462
proximal, 83, 84, 246, 254, 275, 398
- Ascending aorta conduit, 282–284
- Ascending connecting vein, 25, 26, 27, 28
- Ascending pulmonary venous channel, 215
- ASD (atrial septal defect), 2–6, 92, 135, 216, 221, 231, 234, 327, 337, 407, 421
closure of, 10–11, 14, 230, 233
coronary sinus, 12, 108, 224, 225–227, 332
Dacron® patch for, 44, 57, 58, 63, 64, 65, 70, 71, 219, 222, 223, 225, 227, 236, 273
after failed device closure, 12
isolated, 10–14
with partial pulmonary venous connection, 10–11, 15–28
primum, 38–41, 45, 50, 52, 57, 61
residual, 9, 12
secundum, 45
tricuspid insufficiency and, 29–36
- Atretic outflow tract, 198
- Atretic valve, 137
- Atrial appendage
left, 26, 27, 28, 42, 232
right, 7, 335
- Atrial chambers, 239
distal left, 238
proximal left, 238
- Atrial junction, right, 220–223
- Atrial obstructive lesions, left, 237–244
- Atrial septal defect. *See* ASD
- Atrial septal flaps, 329, 330, 331
- Atrial septum, 2, 3, 4, 21, 22, 52, 218, 233, 234, 328, 331, 332
intact, 25–27
- Atriectomy, 4, 7, 8, 15, 16, 20, 21, 38, 41, 45, 53, 74, 75, 79, 89, 92, 93, 106, 118, 122, 133, 216, 217, 219, 229, 230, 320, 327, 333, 334, 335, 336, 337, 386, 421
- Atrio-ventricular valves. *See* AV valve
- Atrium, 1, 11
common, endocardial cushion defects of, 41–43
left, 2–4, 4–8, 24, 25, 228, 229, 237, 349
right, 15, 17, 18, 20, 21, 23, 32, 33, 88, 117, 118, 121, 223–225, 335
- Autograft, 278, 279, 280, 281, 339
- AV canal. *See* Complete AV canal
- AV node, 225, 227
- AV (atrio-ventricular) valve, 37, 38, 45, 46, 53, 127
- AV valve leaflets, 45–48, 53, 54, 55, 59, 65, 67, 68, 69, 101
- Azygos vein, 15, 17, 101, 140, 213
- B**
- Balloon angioplasty, closed, 129
- Balloon septostomy, 135
- Balloon valvuloplasty, 135
- Bicaval cannulation, xiii–xiv, 285, 326
- Bidirectional caval pulmonary shunt, 105
- Blalock-Taussig (subclavian artery to pulmonary artery) shunt, 138–139, 140, 209
left, 166
right, 165–166
- Blind main pulmonary artery pouch, 104, 105, 106, 107, 113, 114
- Blind superior vena cava pouch, 106, 113, 114
- Bulboventricular foramen
enlargement of, by resection of septal tissue, 127–128
obstruction of, 124–128
restrictive, 128
- C**
- Cannula, 2, 4
aortic, 288, 406
arterial, 409
caval, 2, 15, 16, 18, 19, 20
- Cannulation
aortic, 171
bicaval, xiii–xiv, 285, 326
high, of superior vena cava, 2–4, 101
- Cardiac catheterization, 1, 9
- Cardiac hernia sac, 467
- Cardiac pacemaker, permanent, 471–472
- Cardiopulmonary bypass, xiii, xiv, 1
- Carotid artery, 417
common, 416
left, 287, 402, 415, 432, 433, 434, 441
right, 418
- Catheterization, cardiac, 1, 9
- Cava atrial junction, 4, 15, 17, 20, 101, 328
- Caval cannula, 2, 19, 20
superior vena, 15, 16, 18
- Caval drainage, high superior, of partial pulmonary venous connection, 17–20
- Caval tunnels, 326–332, 334, 339, 340, 341, 342
- Central shunt (ascending aorta to main pulmonary artery), 143–144
- Cephalad septum, anterior, 11
- Circumflex coronary artery, 164
- Closed balloon angioplasty, 129
- Closed heart surgery, xiii
- Coarctation of aorta
Dacron® patch angioplasty, 439–443
resection and primary anastomosis, 425–427
subclavian artery flap angioplasty, 428–437
subclavian artery translocation angioplasty, 437–439
- Collateral arteries, 208–213
- Commissures
incised, 130, 131, 155, 247, 262, 267, 304
stenotic, 246
- Commissurotomy, 155
- Common annulus, 194, 197
- Common atrium, endocardial cushion defects of, 41–43
- Common carotid artery, 416
- Common pulmonary veins, 228, 229
- Common transverse pulmonary vein, 214, 217, 218
- Complete AV canal, 45–65, 255
modified single-patch repair, 59–65
tetralogy of Fallot and, 65–73, 129
two-patch repair, 53–58
- Conduit, 322
aortic homograft-valved, 348–353
ascending aorta, 282–284
Dacron®, 346, 359, 360, 363, 443
Gore-Tex®, 410
homograft, 206, 207, 208, 362
intra-atrial, 123–124
obstructed, late replacement of, 359–364
porcine-valved, valved conduit repair with, 343–348, 360
pulmonary homograft-valved, 353–355

- Conduit repair
 extracardiac, 117–123, 321
 valved, 343–355, 360
- Conduit valve, 309, 310, 347, 348
- Conus left anterior descending coronary artery, tetralogy of Fallot relating to, 163–165
- Conus muscle, 316
- Coronary anastomosis, 377–378, 380
- Coronary arteries, 301, 304
 anterior descending, left, 163–165
 circumflex, 164
 conus left anterior descending, tetralogy of Fallot relating to, 163–165
 intramural, 382–384
 left, anomalous origin of
 coronary artery origin from right pulmonary artery, 378–381
 direct re-implantation as repair for, 374–378
 intrapulmonary artery tunnel as repair for, 369–374
 main left, 193, 261, 263, 286, 293, 296, 298, 369–381, 382, 390, 391, 399
 main right, 164, 193, 263, 275, 285, 286, 293, 296, 298, 316, 322, 369, 374, 382, 383, 385, 388
- Coronary artery aneurysm, 385
- Coronary artery buttons
 explantation of, 293, 294, 296, 299, 303, 379, 380
 implantation of, 290, 292, 293, 294
 left, 290, 291, 292, 294–296, 299
 right, 291, 292, 293, 294–296, 299
- Coronary artery fistula, 385–392
- Coronary artery origin from right pulmonary artery, 378–381
- Coronary cusp
 left, 83, 84, 85, 246, 254
 non, 83, 246, 249, 260
 right, 83, 84, 86, 246, 252, 254, 260
- Coronary implant site, flaps at, 292
- Coronary sinus ASD, 12, 108, 224, 225–227, 332
- Corpora arantii, 83, 84
- Cor triatriatum, 237–240
 membranes relating to, 237–240
- D**
- Dacron® conduit, 346, 359, 360, 363, 443
- Dacron® patch. *See* Patch
- Dacron® patch angioplasty, 439–443
- Descending aorta, 210, 212, 404, 405, 413, 415, 417–420, 423, 441, 451
- DeVega annuloplasty, 29–30
- Diaphragm deficiency, 466, 467
- Direct re-implantation, 374–378
- Distal arch, 444, 447
 anterior, 451, 452
 posterior, 452, 453
- Distal left atrial chambers, 238
- Distal right pulmonary artery, 178, 179
- Diverticulum, 466–467
- Double aortic arch, 451–454
- Double chamber right ventricle, 131–134
- Double outlet ventricle
 left, 193–197
 right, 188–192
- Double ventricle, left, 35–36
- Double-switch operation, 319, 326–342
- d-Transposition of great arteries
 arterial switch: Jatene operation, 285–307
 Kawashima operation, 316–318
 Rastelli operation, 307–315, 326
- Ductal stump, 396, 406, 416, 435
- E**
- Ebstein's anomaly, 29
 mild, 30–32
 severe, 32–36
- Ectopia cordis, 463–470
- Ectopic heart, 463
- Endocardial cushion defects
 common atrium, 41–43
 complete atrioventricularis communis or AV canal, 45–65
 tetralogy of Fallot and, 65–73, 129
 inlet VSD, 43–44
 primum ASD, 38–41, 45, 50, 52, 57, 61
- Endocardial incision, 328
- Endocardium, 222, 328, 338
- Endothelialized patch, 79
- Epicardial bead, 471
- Esophagus, 452, 453, 455
- Eustachian valve, 108, 109
- Extracardiac conduit repair, 117–123, 321
- Extracardiac direct anastomosis, 24–25
- F**
- Failed device closure, ASD after, 12
- Fenestration, 109–112, 115, 116, 121, 122, 123, 124
- Fibromuscular ledge, 248
- Fibrous collar, 250
- Fontan operation, 135
 bulboventricular foramen, obstruction of, relating to, 124–128
 first-stage, 101–105
 second-stage, 101, 103, 402
 extracardiac conduit repair, 117–123, 321
 intra-atrial conduit, 123–124
 intra-atrial lateral tunnel repair, 106–116, 123
- Formalin infiltration, 135, 137
- Fossa ovalis, 10, 22
- G**
- Gore-Tex® conduit, 410
- Gore-Tex® graft, 140, 142, 167, 402, 403, 406, 407, 408, 409, 411–414, 418
- Gore-Tex® hood, 355, 362
- Gore-Tex® patch, 18, 19, 72, 101, 108, 109, 110, 115, 119, 126, 127, 160, 192, 200, 314, 315, 364, 435, 437, 440
- Grafts, 141. *See also* Autograft; Gore-Tex® graft; Homograft; PTFE
- Great arteries. *See* d-Transposition of great arteries; I-Transposition of great arteries
- Great vessels, 297, 299, 300, 303, 304, 316, 464
- H**
- Heart. *See also* Hypoplastic left heart syndrome
 ectopic, 463
 retracting of, 21
 surgery for
 closed, xiii
 open, xiii
- Heart syndrome, left, hypoplastic, 402–414
- High cannulation, of superior vena cava, 2–4, 101
- High marginal branches, 164
- High superior caval drainage, of partial pulmonary venous connection, 17–20
- His bundle, 39, 40, 43, 44, 50, 51, 58, 62, 71, 76, 88, 92, 127, 148, 149, 190, 227, 257, 272, 320, 321, 323, 324
- Homograft, 173–177, 185, 186, 187, 206–208, 277, 278, 281, 312, 314
 aortic, 184
 pulmonary, 361, 362
- Homograft conduit, 206, 207, 208, 362
- Homograft mitral leaflet, 352, 353, 361
- Homograft patch, 161, 162, 163, 204, 205, 264, 276, 278, 303, 304, 305, 403, 404, 406, 410, 411, 414
- Homograft pulmonary valve cusp, 161, 162, 163, 186
- Homograft valve, 275–278
- Homograft-valved conduit
 aortic, 348–353
 pulmonary, 353–355
- Hypoplasia, 135, 136
- Hypoplastic left heart syndrome, 140, 402–414
- Hypoplastic right ventricular outflow tract, repair of, 157–163

- I**
 Incised commissures, 130, 131, 155, 247, 262, 267, 304
 Inferior vena cava, 1, 21, 23, 24, 101, 116, 117, 118, 119, 327, 337
 Infundibular stenosis, 163
 double chamber right ventricle and, 131–134
 Infundibulum, 156, 157, 160, 196, 200.
 See also Os infundibulum
 Innominate artery, 137, 138, 140, 141, 166, 287, 402, 408, 409, 454
 Innominate vein, 17, 25, 215
 Intact atrial septum, 25–27
 Intercostal space thoracotomy, 24, 25, 97, 138, 139, 212, 364, 451
 Internal mammary artery, 437
 Interrupted aortic arch
 Type A, 415–416
 Type B, 416–424
 Type C, 415
 Intimal fibrous ridge, 98, 99
 Intra-atrial baffle, 101, 112, 117
 Intra-atrial conduit, 123–124
 Intra-atrial lateral tunnel, 123
 repair of, 106–116
 Intra-atrial procedures, xiii
 Intracardiac baffle, 113
 Intracardiac tunnel repair, 21–23
 Intramural coronary artery, 382–384
 Intrapulmonary artery tunnel, 369–374
 Isolated ASD, 10–14
 I-Transposition of great arteries
 double-switch operation, 319, 326–342
 with VSD and pulmonic stenosis, 319–326
- J**
 Jatene operation, 285–307
- K**
 Kawashima operation, 316–318
 Konno procedure. *See also* Ross-Konno procedure
 with homograft valve, 275–278
 modified, 255–259
 with prosthetic valve, 271–274
- L**
 Late replacement, of obstructed conduit, 359–364
 Leaflets
 of aortic valve, 81, 264, 279, 401
 AV valve, 45–48, 53, 54, 55, 59, 65, 67, 68, 69, 101
 mitral, 38–42, 48–49, 51, 56, 184, 185, 244, 269, 276, 312, 323, 324
 homograft, 352, 353, 361
 pulmonary valve, 80, 81, 130, 137, 154, 155
 of tricuspid valve, 29–31, 33–35, 43–45, 44, 51, 52, 75, 76, 77, 87, 88, 89, 91, 92, 93, 133, 148, 149, 151, 153, 183, 194, 199
 Le Compte maneuver, 297
 Ligamentum arteriosum, 451, 452, 455, 458
 Ligamentum, left, right arch with, 455–462
 Ligamentum stump, 452, 455
- M**
 Mammary artery, internal, 437
 Membranes
 cor triatriatum relating to, 237–240
 supramitral ring relating to, 241–244
 Membranous ventricular septum, 79, 88, 149, 194
 Membranous VSD, 133
 Mitral leaflet, 38–42, 48–49, 51, 56, 184, 185, 244, 269, 276, 312, 323, 324
 homograft, 352, 353, 361
 Mitral leaflet tissue deficiency, primum ASD with, 40–41
 Mitral stenosis, 241
 Mitral valve, 41, 42, 237, 239, 240, 242, 320, 325
 function of, 9
 Mitral valve chords, 255
 Mitral valve cleft, 39, 40–41, 70
 Mitral valve papillary muscle, anomalous, 254–255
 Moderator band, 132, 133, 134
 Modified Blalock-Taussig (subclavian artery to pulmonary artery) shunt, 140–142, 211, 213, 407
 Modified Konno procedure, 255–259
 Modified Norwood procedure, with RV to PA shunt, 408–414
 Modified single-patch repair, for complete AV canal, 59–65
 Multiple anomalous collateral arteries, recruitment of, 208–213
 Muscle bands, 152
 Muscles. *See also* Papillary muscles
 conus, 316
 Muscular infundibular floor, 146, 148, 150
 Mustard procedure, 326
 Myocardial fibrosis, 373
- N**
 Native aorta, 281
 Native vessel, 304, 305
 Neoaorta, 297–302, 305, 306, 405, 406, 414
 Neointima, 360, 363
- Norwood procedure
 Blalock shunt with, 402–414
 modified, RV to PA shunt with, 408–414
- O**
 Omphalocele, 463, 464, 465
 Open heart surgery, xiii
 Os infundibulum, 131, 132, 134, 146, 164
 Osteal stenosis, 365, 366
 Outflow tract
 atretic, 198
 pulmonary ventricle, 319, 320, 322, 325
 ventricular, left, 249, 273
 ventricular, right, 256, 271, 274, 278, 318
 reconstruction of, 138, 144–145
 Outflow tract patch, 259, 468
 Outflow tract reconstruction. *See* Tetralogy of Fallot
- P**
 Pacemaker, cardiac, permanent, 471–472
 Palliation
 with plication, 364–367
 repair and, of tetralogy of Fallot, with absent pulmonary valve syndrome, 177–187
 stage I, 402
 surgical, 135, 138
 Palliative shunts and outflow tract reconstruction, 163
 central shunt (ascending aorta to main pulmonary artery), 143–144
 classic Blalock-Taussig (subclavian artery to pulmonary artery) shunt, 138–139, 140, 165–166, 209, 285
 modified Blalock-Taussig (subclavian artery to pulmonary artery) shunt, 140–142, 211, 213, 407
 reconstruction of right ventricular outflow tract, 144–145
 Papillary muscle extension, anomalous, 254, 255
 Papillary muscles, 90, 91, 132, 149, 243
 mitral valve, anomalous, 254–255
 tricuspid valve, 132
 Parietal band, 131, 132, 133, 134, 146, 147, 151, 152, 302
 Partial pulmonary venous connection
 ASD with, 10–11, 15–28
 high superior caval drainage of, 17–20
 Patch. *See also* Complete AV canal; PTFE
 Dacron®, 3, 4, 6, 11, 16, 17, 19, 22, 23, 43, 50, 51, 52, 159, 165, 437, 442
 for ASD, 44, 57, 58, 63, 64, 65, 70, 71, 219, 222, 223, 225, 227, 236, 273

- for VSD, 55, 56, 59, 65, 69, 70, 72, 74, 78, 81, 87, 89, 91, 92, 94, 134, 150, 153, 154, 184, 191, 194, 195, 197, 199, 201, 203, 204, 258, 272, 273, 274, 280, 281, 308, 309, 311, 317, 321, 322, 324, 346, 351, 357, 394, 399, 422, 424, 468
- endothelialized, 79
- Gore-Tex®, 18, 19, 72, 101, 108, 109, 110, 115, 119, 126, 127, 160, 192, 200, 314, 315, 364, 435, 437, 440
- homograft, 161, 162, 163, 204, 205, 264, 276, 278, 303, 304, 305, 403, 404, 406, 410, 411, 414
- outflow tract, 259, 468
- pericardial, 17, 20, 23, 41, 72, 100, 104, 114, 157, 158, 159, 171, 200, 269, 270, 274, 300, 301, 303, 330, 340, 341, 342, 350, 351, 353, 358, 372, 378, 381
- SILASTIC, 307
- subclavian artery, 438, 439
- synthetic, 261, 262, 326
- transannular, 146, 151, 173–177
- Patch angioplasty, Dacron®, 439–443
- Patch repair, valveless, 355–358
- Patent ductus arteriosus, 137, 228, 288, 289, 395, 404, 413, 415, 416, 417, 419, 425–427, 431, 434, 437, 444–450
- Pedicle flaps, of right atrium, 17, 18, 20
- Pentalogy of Cantrell, 465
- Pericardial autograft, 339
- Pericardial lappet of Gross, 445
- Pericardial patch, 17, 20, 23, 41, 72, 100, 104, 114, 157, 158, 159, 171, 200, 269, 270, 274, 300, 301, 303, 330, 340, 341, 342, 350, 351, 353, 358, 372, 378, 381
- Pericardiectomy, 97
- Pericardium, 24, 26, 117, 215, 269, 453, 454, 456, 458, 459, 465, 471
- Perimembranous VSD, 74–79, 152
- Permanent cardiac pacemaker, 471–472
- Phrenic nerve, 24, 458
- Polytetrafluoroethylene grafts. *See* PTFE grafts/patch
- Porcine-valved conduit, valved conduit repair with, 343–348, 360
- Potts shunts, 172
- Primum ASD
 - as endocardial cushion defects, 38–41, 45, 50, 52, 57, 61
 - with mitral leaflet tissue deficiency, 40–41
- Prosthetic valve, 270–274
- Proximal arch, 454
- Proximal ascending aorta, 83, 84, 246, 254, 275, 398
- Proximal left atrial chamber, 238
- Proximal muscle rim, 354
- Proximal pulmonary artery
 - left, 204
 - main, 195, 358, 375, 403, 405, 406, 412, 413
 - right, 178
- PTFE (polytetrafluoroethylene)
 - grafts/patch, 140, 145
- Pulmonary arteries, 344, 346, 355, 358, 360, 361, 364, 365, 366, 445. *See also* Palliative shunts and outflow tract reconstruction
 - aortic origin of, 395–396
 - bifurcation of, 303
 - left, 26, 116, 139, 141, 142, 172, 175, 181–183, 205, 207, 209–211, 220, 223, 224, 225, 228, 287, 306, 344, 348, 350, 364, 367, 393, 458, 459, 460, 461, 462
 - main, 27, 80, 96, 97–100, 101, 102, 103, 104, 105, 125, 126, 130, 131, 143–144, 145, 151, 154, 157, 162, 172, 179, 180, 188, 193, 195, 200, 201, 204, 215, 220, 228, 282, 286, 287, 290, 296, 297, 298, 303, 309, 313, 316, 317, 319, 322, 325, 326, 369, 370, 374, 375, 376, 382, 393, 395, 396, 397, 402, 409, 416, 449, 450, 456, 458, 459, 460, 462
 - neomain, 303, 304, 305, 306
 - proximal
 - left, 204
 - main, 195, 358, 375, 403, 405, 406, 412, 413
 - right, 178
 - right, 25, 105, 140, 141, 165, 168, 169, 170, 171, 172, 175, 177, 178, 179, 180–183, 212, 213, 214, 220, 223, 225, 226, 306, 349, 350, 356, 364, 367, 378–381, 393, 394, 395, 396, 459, 461
- Pulmonary artery band, 125
- Pulmonary artery banding and band removal, at subsequent total repair, 96–100
- Pulmonary artery branches, 119, 411
- Pulmonary artery pouch, blind main, 104, 105, 106, 107, 113, 114
- Pulmonary artery stump, 446
- Pulmonary atresia
 - intact ventricular septum and, 135–137
 - with VSD, 311
 - multiple anomalous collateral arteries, recruitment of, 208–213
 - total repair of, 198–208
- Pulmonary homograft, 361, 362
- Pulmonary homograft-valved conduit, 353–355
- Pulmonary shunt, 135
 - bidirectional caval, 105
- Pulmonary stenosis, 313
 - infundibular stenosis and double chamber right ventricle, 131–134
 - valvular, 129–131
- Pulmonary valve, 79, 144, 154, 189, 193, 194, 317, 325, 370, 375
 - trileafed, 130
- Pulmonary valve annulus, 82, 146, 151, 155, 158, 160, 180, 183, 186, 190
- Pulmonary valve cusp, homograft, 161, 162, 163, 186
- Pulmonary valve leaflets, 80, 81, 137, 154, 155
- Pulmonary valve placement, with transannular patch, 173–177
- Pulmonary valve syndrome, absent, palliation and repair of, 177–187
- Pulmonary valvotomy, 129
- Pulmonary vascular obstructive disease, 96
- Pulmonary veins, 4, 6, 10, 27, 242
 - anomalous, 15, 16, 17, 18, 20, 21, 22, 221, 224
 - common, 228, 229
 - common transverse, 214, 217, 218
 - left, 26, 231, 338
 - lower lobe, 25, 26, 232
 - upper lobe, 25, 26, 232
 - right, 20, 231, 234, 235, 237, 327, 338
 - lower, 217, 228, 238, 239, 333
 - upper, 217, 228, 238, 332, 334
- Pulmonary vein stenosis, 231–236
- Pulmonary venous anomalies
 - pulmonary vein stenosis, 231–236
 - total anomalous pulmonary venous connection
 - intracardiac to coronary sinus, 225–227
 - intracardiac to right atrium, 223–225
 - subdiaphragmatic, 228–230
 - supracardiac, 214–219
 - supracardiac at superior vena cava to right atrial junction, 220–223
- Pulmonary venous channel, ascending, 215
- Pulmonary venous connection
 - anomalous left upper lobe, with intact atrial septum, 25–27
 - partial
 - ASD with, 10–11, 15–28
 - high superior caval drainage of, 17–20
- Pulmonary ventricle, 319
- Pulmonary ventricle outflow tract, 319, 320, 322, 325
- Pulmonic stenosis, 319–326
- Pulmonic valve, 93, 196, 197

- Punch aortotomy, 371
 Purse-string stitch, 110, 111, 112, 122, 123, 402, 418
- R**
 Rastelli operation, 307–315, 326
 Reconstruction. *See* Palliative shunts and outflow tract reconstruction
 Recurrent laryngeal nerve, 446
 Resection
 fibromuscular obstruction relating to, 247, 248, 249, 250, 252, 253
 primary anastomosis and, 425–427
 of septal tissue, 127–128
 Residual ASD, 9, 12
 Ribs, 469–470
 Right ventricular dilatation. *See* RV dilatation
 Ross-Konno procedure, 278–281, 285
 RV (right ventricular) dilatation, 9
- S**
 SA (sinoatrial) node, 10, 15, 17, 18, 106, 107, 115, 117, 331, 334
 Scimitar's syndrome, 20–23
 Scimitar's vein, 24, 25
 Secundum ASD, 45
 Senning operation, 326, 327–336
 Septal band, 146, 147, 156
 Septal defects. *See* ASD; VSD
 Septal flaps, atrial, 329, 330, 331
 Septal tissue, resection of, 127–128
 Septostomy, balloon, 135
 Septum, 226, 227, 239, 240
 atrial, 2, 3, 4, 21, 22, 52, 218, 233, 234, 328, 331, 332
 intact, 25–27
 cephalad, anterior, 11
 ventricular, 189, 190, 193, 196, 249, 256, 271, 272, 276, 320
 intact, 135–137
 membranous, 79, 88, 149, 194
 Shunts. *See also* Norwood procedure; Palliative shunts and outflow tract reconstruction
 Potts, 172
 pulmonary, 135
 bidirectional caval, 105
 repair of, 165–172
 systemic-to-pulmonary artery, 138
 Waterston, 168–171
 Sideris occluder, 12, 13
 SILASTIC patch, 307
 Sinoatrial node. *See* SA node
 Sinus, coronary, ASD, 12, 108, 224, 225–227, 332
 Sinuses of Valsalva, 83, 84, 259, 260, 261, 263, 266, 277, 279, 281, 285, 298, 300, 304
 Sinus of Valsalva aneurysm, 400–401
- Stage I palliation, 402
 Stenosing ring. *See* Supravalvar stenosing ring
 Stenosis, 423
 infundibular, 131–134, 163
 mitral, 241
 osteal, 365, 366
 pulmonary, 313
 pulmonary vein, 231–236
 pulmonic, 319–326
 subaortic, 247–255
 supravalvar, 259–268
 truncal valve, 367–368
 valvular, 245–284
 valvular pulmonary, 129–131
 Stenotic commissures, 246
 Sternotomy, median, xiii, 27, 282, 416, 461, 469
 Sternum, 457, 465, 469
 Straddling tricuspid valve, 89–91
 Subaortic stenosis: fibromuscular obstruction, 247–255
 resection relating to, 247, 248, 249, 250, 252, 253
 Subclavian arteries, 25, 138, 139, 140, 141, 142, 165, 166, 287, 404, 405, 415, 417, 420, 425, 426, 427, 428, 431, 432, 433, 437, 438, 441, 444, 451, 452, 455, 456. *See also* Palliative shunts and outflow tract reconstruction
 Subclavian artery flap, 429–435
 Subclavian artery flap angioplasty, 428–437
 Subclavian artery patch, 438, 439
 Subclavian artery translocation angioplasty, 437–439
 Subclavian artery trunk
 left, 166
 right, 165, 166
 Subpulmonary VSD, 74, 79–87
 supracristal, 79
 Subvalvar chamber, 164
 Sulcus terminalis, 112, 327, 331, 332
 Superior vena cava, 15, 103, 105, 140, 165, 178, 179, 214, 220–223, 327, 328, 329, 331, 334, 337
 high cannulation of, 2–4, 101
 left, 1, 2–4
 lower segment of, 5, 17, 18, 19
 right, 1, 4–8
 upper segment of, 5, 7, 19, 20
 Superior vena caval cannula, 15, 16, 18
 Superior vena cava pouch, blind, 106, 113, 114
 Superior vena cava pouch, blind, 106, 113, 114
 Supracardiac connection, 214–219
 at superior vena cava to right atrial junction, 220–223
 Supracristal subpulmonary VSD, 79
- Supramitral ring, 241–244
 membrane relating to, 241–244
 Supravalvar stenosing ring, 260, 261, 263, 265
 Supravalvar stenosis, 259–268
 Surgery, heart, xiii
 Surgical palliation, 135, 138
 Synthetic patch, 261, 262, 326
 Systemic-to-pulmonary artery shunt, 138
 Systemic venous return, anomalous, 1–8
 Systemic ventricle, 319
- T**
 Takeuchi procedure. *See* Intrapulmonary artery tunnel
 Tetralogy of Fallot, 129, 190, 465
 complete AV canal and, 65–73, 129
 with conus left anterior descending coronary artery, repair of, 163–165
 hypoplastic right ventricular outflow tract, repair of, 157–163
 palliation and repair of, with absent pulmonary valve syndrome, 177–187
 palliative shunts and outflow tract reconstruction, 138–145, 163
 pulmonary valve placement with transannular patch after repair of, 173–177
 shunts, repair of, 165–172
 total repair of
 transatrial, 151–157
 transventricular, 146–150
 Thoracic aorta, 417, 419
 Thoracotomy
 intercostal space, 24, 25, 97, 138, 139, 212, 364, 451
 left, 141, 209, 415, 425, 428, 451, 455, 458
 right, 25, 97, 140, 177
 Thromboembolism, 9
 Thymus, 458
 Thymus remnant, 453
 Trabeculations, 93, 94, 146
 Trachea, 453, 456
 Transannular patch, 146, 151
 pulmonary valve placement with, 173–177
 Transatrial. *See* Tetralogy of Fallot
 Transventricular. *See* Tetralogy of Fallot
 Transverse aortic arch, 415
 Transverse arch, 402
 Transverse pulmonary vein, common, 214, 217, 218
 Tricuspid atresia, 29
 Tricuspid insufficiency, 135
 ASD and, 29–36
 DeVega annuloplasty for, 29–30

- Tricuspid valve, 10, 14, 42, 129, 157, 224, 335, 386, 400, 422
 duplication of, with double inlet left ventricle, 35–36
 hypoplasia of, 135
 leaflets, 29–31, 33–35, 43–45, 44, 51, 52, 75, 76, 77, 87, 88, 89, 91, 92, 93, 133, 148, 149, 151, 153, 183, 194, 199
 straddling, 89–91
 Tricuspid valve annulus, 29–30, 32, 34, 87, 130, 136, 400
 Tricuspid valve anomalies
 Ebstein's anomaly, 29, 30–36
 tricuspid insufficiency, 29–30
 Tricuspid valve papillary muscle, 132
 Trileafed pulmonary valve, 130
 Truncal valve, 356, 367, 368
 Truncal valve annulus, 351, 353
 Truncal valve stenosis, 367–368
 Truncal vessel, 344, 348, 350, 356, 364, 365, 366
 Truncus arteriosus
 late replacement of obstructed conduit, 359–364
 palliation with plication, 364–367
 truncal valve stenosis, 367–368
 valved conduit repair, 343–355, 360
 valveless patch repair, 355–358
 Two-patch repair, for complete AV canal, 53–58
- U**
 Unicuspid valve, 245
- V**
 Vagus nerve, 139, 140, 141, 444
 Valvar obstruction, 129
 Valvectomy, 135, 136
 Valved conduit repair
 aortic homograft-valved conduit, 348–353
 with porcine-valved conduit, 343–348, 360
 pulmonary homograft-valved conduit, 353–355
- Valve leaflets, 272, 363
 Valves. *See* Specific valves
 Valvotomy, 247, 356, 367, 368
 Valvular pulmonary stenosis, 129–131
 Valvular stenosis, 245–284
 aortic root enlargement procedures:
 posterior root enlargement, 268–281
 apical left ventricle to ascending aorta conduit, 282–284
 modified Konno procedure for, 255–259
 subaortic stenosis: fibromuscular obstruction, 247–255
 supralvalvar stenosis, 259–268
 Valvuloplasty, 82, 268
 balloon, 135
 Vascular ring and vascular sling
 double aortic arch, 451–454
 right arch with left ligamentum, 455–462
 Ventricles
 apical left, to ascending aorta conduit, 282–284
 double outlet
 left, 193–197
 right, 188–192
 left, 5
 to aortic tunnel, 397–399
 double inlet, 35–36
 pulmonary, 319
 right, 135, 179
 double chamber, 131–134
 systemic, 319
 Ventricular hypertension, 124, 135
 Ventricular outflow tract
 left, 249, 273
 pulmonary, 319, 320, 322, 325
 right, 256, 271, 274, 278, 318
 hypoplastic, 157–163
 reconstruction of, 138, 144–145
 Ventricular septal defect. *See* VSD
 Ventricular septum, 189, 190, 193, 196, 249, 256, 271, 272, 276, 320
- intact, 135–137
 membranous, 79, 88, 149, 194
 Ventriculotomy, 91, 95, 127, 128, 131, 144, 145, 146, 158, 160, 162, 164, 185, 189, 193, 197, 198, 200, 202, 208, 256, 257, 259, 271, 274, 275, 277, 278, 281, 282, 307, 309, 310, 312, 314, 315, 316, 321, 345, 347, 348, 351, 352, 353, 354, 355, 358, 359, 361, 364, 467, 468
 Vertebral artery, 437, 438
 VSD (ventricular septal defect), 38, 45, 49, 53, 60, 61, 63, 67, 68, 146, 183, 189–191, 193, 196, 257, 276, 279, 307, 310, 316, 345, 364, 464
 apical, 74, 95
 cephalad margin of, 77
 Dacron® patch for, 55, 56, 59, 65, 69, 70, 72, 74, 78, 81, 87, 89, 91, 92, 94, 134, 150, 153, 154, 184, 191, 194, 195, 197, 199, 201, 203, 204, 258, 272, 274, 280, 281, 308, 309, 311, 317, 321, 322, 324, 346, 351, 357, 394, 399, 422, 424, 468
 inlet, 87–91
 endocardial cushion defects of, 43–44
 right, 136
 with straddling tricuspid valve, 89–91
 membranous, 133
 muscular, 74, 91–95
 perimembranous, 74–79, 152
 posterior inferior rim of, 148, 149, 153
 pulmonary artery banding and band removal at subsequent total repair, 96–100
 pulmonary atresia with, 198–213
 pulmonic stenosis and, I-Transposition of great arteries with, 319–326
 subpulmonary, 74, 79–87
 supracristal, 79
- W**
 Waterston shunt, 168–171

