Index

Note: Page numbers of article titles are in **boldface** type.

A	supraclavicular, 15–23
Abdominal pain, neurostimulation for, 119 Allotransplantation, for peripheral nerve regeneration, 124–126	clinical features of, 17 diagnosis of, 16–17 evaluation of, 15 injuries associated with, 17
Alveolar nerve, iatrogenic injury of, 83 Angina, unstable, neurostimulation for, 114 Animal models, for nerve cells, 130–131	level of lesion in, 16 surgical treatment of, 15–21, 26–27 surgical treatment of
Anticoagulants, bleeding due to, nerve injury in, 85 Arteriovenous fistulas, in brachial plexus injuries, 25	acute, indications for, 25–26 delayed, 26–27
Arthrodesis, shoulder, 63 Avulsion, of nerve roots. See Nerve root injuries.	for elbow function restoration, 53–61 for shoulder function restoration, 61–63
Axillary nerve, transfer of, 30 Axonotmesis, in brachial plexus injury, 6–7	iatrogenic, 27 infraclavicular, 27 late, 53-65
В	nerve transfers for, 30–38 obstetric, 3–11
Battlefront, peripheral nerve surgery in, 109–112 Bernard-Horner sign, in brachial plexus injuries, 43	replantation in, 41-52, 43-50 supraclavicular, 15-21, 26-27
Biceps muscle, paralysis of, in brachial plexus injuries, 3–4	vascular lesions with, 27
Blast injuries, repair of, 109–112 Blunt transection, 25–26, 87–88	С
Bonney, George, brachial plexus repair policy of, 15–16	Carpal tunnel release, iatrogenic nerve injury in, 67–73 , 78–79
Brachial artery, cannulation of, nerve injury in, 84–85 Brachial plexitis, 86	anatomic variations and, 68–69 inappropriate dissection in, 69
Brachial plexus injuries assessment of, 43	incomplete release in, 71 risks for, 68
blunt transection in, 25–26 C5-C6, 30	statistics on, 63 technique to avoid, 63–72
C5-C7, 30 C5-T1, 31	Central venous catheterization, nerve injury in, 84–85 Collagen nerve tubes, 96, 98, 103
in benign tumor resection, 83–84 in central venous catheterization, 84–85	Complex regional pain syndrome, neurostimulation for, 114
in radiation therapy, 86 infraclavicular, 5, 27	Compound motor action potentials, intraoperative, in brachial plexus repair, 7
natural history of, 27 obstetric, 1–14	Computed tomography, in brachial plexus injuries, 43 Contractures, in brachial plexus injuries, 3
causes of, 1 conservative treatment of, 3	Contusions, of brachial plexus, 26–27 Cranial neuropathy, neurostimulation for, 115–116
electromyography in, 3–4 incidence of, 1 natural history of, 1–2 pathophysiology of, 2–3	Cutaneous nerves, iatrogenic injury of, 81–82 Cyclosporin A, for nerve grafting, 125–126 Cystitis, interstitial, neurostimulation for, 117
prognosis for, 3–4 responsibility for, 1	D
spectrum of, 1 surgical treatment of, 3–11 sharp transection in, 25	Delivery, brachial plexus injuries in. See Brachial plexus injuries, obstetric.

Neurosurg Clin N Am 20 (2009) 133–136 doi:10.1016/S1042-3680(08)00105-8 1042-3680/08/\$ – see front matter © 2008 Elsevier Inc. All rights reserved. Digital nerves, iatrogenic injury of, 81–82 Doi procedure, for brachial plexus repair, 59–61

Ε

Elbow flexion, restoration of, 7–10, 53–61
Electrical stimulation. See Neurostimulation.
Electrodiagnostic studies, intraoperative, in brachial plexus repair, 7
Electromyography, in brachial plexus injuries, 3–4
Endoscopic procedures, carpal tunnel release, 67–73

Exercise, for brachial plexus injuries, 3

F

Facial nerve, iatrogenic injury of, 83
Failed back surgery syndrome, neurostimulation for, 114
Femoral nerve, iatrogenic injury of, 82, 84–85
FK506, for nerve grafting, 126
Fractures, in brachial plexus injuries, 43

G

General anesthesia, nerve injury during, 85–86
Genitofemoral nerve, iatrogenic injury of, 82
Glenohumeral rotation, in brachial plexus repair, 7–8
Gracilis muscle transfer, for brachial plexus injury reconstruction, 54–60
Grafts, nerve for brachial plexus injuries, 7 for peripheral nerve regeneration, 124–126
Growth factors, in nerve tubes, 103
Gunshot wounds in warfare, 109–112 of brachial plexus, 26

н

Hand function, restoration of, 7, 10–11, 59–60 Hand surgery, nerve injuries in, 76–77 Headache, neurostimulation for, 115–116 Hematomas, nerve injury in, 84–85 Hernia repair, nerve injury in, 76, 82, 117 Hip arthroplasty, nerve injury in, 82, 85 Humeral fractures, radial nerve injury in, 80–81

ı

latrogenic nerve injuries, **75–92**brachial plexus, 27
in blunt transection, 87–88
in brachial plexitis, 86
in carpal tunnel release, **67–78**in compressive bleeding, 84–85
in delayed referral, 86

in faulty tumor resection, 83-84 in intraoperative positioning, 85–86 in lesion in continuity, 88 in radiation therapy, 86 in sharp transection, 87 in tourniquet palsy, 85 in unknown mechanisms, 88 indirect damage in, 84 management of, 86-89 mechanisms of, 76 medicolegal aspects of, 88-89 nerves at risk for, 77-83 outcomes of, 88 procedures prone to causing, 76 prognosis for, 86-87 regions at risk for, 76-77 versus traumatic injuries, 75 Iliohypogastric nerve, iatrogenic injury of, 82 Ilioinguinal nerve, iatrogenic injury of, 82 Immunosuppression, for nerve grafting, 125-126 Implantation, of neurostimulation devices nerve root, 116-119 peripheral nerve, 115-116 principles of, 113-114 spinal cord, 114-115 subcutaneous, 119-120 Infants, brachial plexus injuries in. See Brachial plexus injuries, obstetric. Infraclavicular brachial plexus injuries, 27 Infraorbital neuropathy, neurostimulation for, 115-116 Inguinal hernia repair, nerve injury in, 76, 82, 117 Injections, nerve injury in, 84 Intercostal nerves, transfer of, 6, 9, 32-33 Interosseous nerve, anterior, transfer of, 36-37

Κ

Knee surgery, nerve injury in, 76–77

L

Labor and delivery, brachial plexus injuries in. See
Brachial plexus injuries, obstetric.
Laminin nerve tubes, 103
Laryngeal nerve, iatrogenic injury of, 83
Latissimus dorsi muscle transfer, for brachial plexus injury reconstruction, 55
Lingual nerve, iatrogenic injury of, 83
Lymph node biopsy, spinal accessory nerve injury in, 79–80

М

Magnetic resonance imaging, in brachial plexus injuries, 43

00.04
33–84
ıry, 2
400
-122
achial
achial
l plexus
30
80 77
77
77
77
77
77
77
77
.77 tion for,
77
.77 tion for, 9
.77 tion for,
.77 tion for, 9
.77 tion for, 9
ra

Peroneal nerve	iatrogenic injury of, 79-80
iatrogenic injury of, 82	transfer of, 30-32, 56
neurostimulation of, 115–116	Spinal cord
Phrenic nerve, transfer of, 34–35	nerve avulsion from. See Nerve root injuries.
Plasticity, after brachial plexus repair, 49-50	stimulation of, for painful peripheral nerve
Polyglycolic acid nerve tubes, 96, 99, 101–102	disorders, 114-115
Poly(DL-lactide-ε-caprolactone) nerve tubes, 97, 102	Spinal nerves, C7, transfer of, 33
Positioning, intraoperative, nerve injury due to, 85–86	Stretch injuries, of brachial plexus, 26-27
Prosthetic limbs, control of, 111	Subcutaneous neurostimulation, for painful
Pseudoaneurysm, in brachial plexus injuries, 25	peripheral nerve disorders, 119-120
	Supraclavicular brachial plexus injuries. See Brachial
R	plexus injuries, supraclavicular.
N .	Supraorbital neuropathy, neurostimulation for,
Radial nerve, iatrogenic injury of, 80-81, 84-85	115–116
Radiation therapy, nerve injury in, 86	Sural nerve graft, for brachial plexus repair, 7
Radiculopathy, neurostimulation for, 114	
Rectus femoris muscle transfer, for brachial plexus	т
injury reconstruction, 55	ı
Regeneration, of peripheral nerves, 123–137	Tacrolimus, for nerve grafting, 126
allotransplantation in, 124–126	Thoracodorsal nerve, transfer of, 30, 38
at cellular level, 130-131	Tibial nerve
electrical stimulation in, 126-130	iatrogenic injury of, 82
history of, 123	neurostimulation of, 115–116
Replantation, for nerve root injuries, 43–50	Tinel sign, in brachial plexus injuries, 17, 43
endoscopy in, 44–45	Tourniquet palsy, 85
exposure for, 43–44	Transforaminal nerve root stimulation, 117-119
outcome of, 46–49	Trans-spinal nerve root stimulation, 118
plasticity after, 49–50	Trapezius muscle, paralysis of, in brachial plexus
repair in, 45-46	injuries, 17
	Triceps muscle nerve, transfer of, 36
S	Tubes, nerve. See Nerve tubes.
	Tumors, resection of, nerve injury in, 83-84
Saphenous nerve, iatrogenic injury of, 82	
Schwann cells, in nerve tubes, 103	
Schwannomas, resection of, nerve injury in, 83–84	U
Sciatic nerve	Ulnar nerve
allografts for, 126	iatrogenic injury of, 84–86
iatrogenic injury of, 82, 84	transfer of, 30, 35–37
Sensation, restoration of, nerve transfers for, 38	

٧

Serratus anterior muscle, paralysis of, in brachial

Somatosensory evoked potentials, in brachial plexus

Shoulder function, restoration of, 7–8, 61–63

plexus injuries, 17

injuries, 17-18

Spinal accessory nerve

Sharp transection, 25, 87

Silicone nerve tubes, 96, 99-100

Varicose vein surgery, nerve injury in, 82

W

Warfare, peripheral nerve surgery in, 109-112