Index

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

A

AOO. See Atlantooccipital overlap (AOO)

Atlantoaxial dural bands, 246–247

Atlantoaxial instability, **265–275**
  - anatomy related to, 265–266
  - clinical signs of, 266–267
  - diagnosis of, 267–268
  - introduction, 265
  - prognosis of, 271–272
  - treatment of, 268–271
    - dorsal surgical procedures in, 269–270
    - medical, 269
    - ventral surgical procedures in, 270–271

Atlantoaxial joint
  - anatomy of, 265–266

Atlantooccipital overlap (AOO)
  - clinical signs of, 244
  - described, 243–244
  - diagnosis of, 244
  - in dogs, **243–245**
  - management of, 244–245

Axon(s)
  - in cerebral development, 213–216

B

Blockage
  - surgical management of hydrocephalus and, 225–226

Brain
  - cyst-like abnormalities of, **253–263** (See also Cyst-like abnormalities of brain)

Brain vesicles
  - development of, 196

C

Cell bodies
  - in cerebral development, 212–213

Central nervous system (CNS)
  - embryonic development of, **193–216** (See also specific components, e.g., Spinal cord)
    - diencephalon, 209–212
    - introduction, 193–194
    - medulla spinalis, 199–204
Central (continued)
   mesencephalon, 208–209
   metencephalon, 207–208
   myelencephalon, 204–207
   neural tube, 194–199
   neurogenesis in, 199
   telencephalon, 212–216
Cerebellum
   development of, 207–208
Cerebrospinal fluid (CSF) analysis
   in NTDs diagnosis, 341
Cerebrum
   development of, 212–216
   axons, 213–216
   cell bodies, 212–213
Chiari-like malformation (CLM), 231–242
   clinical signs of, 232–233
   described, 231
   diagnosis of, 233–234
   pathophysiology of, 231–232
   treatment of, 234–236
Chiari type 1 malformation
   causes of, 231–232
   described, 231
Choroid plexus cysts, 259–260
CJAs. See Craniocervical junction abnormalities (CJAs)
CLM. See Chiari-like malformation (CLM)
CNS. See Central nervous system (CNS)
Computed tomography (CT)
   in hydrocephalus diagnosis, 221
Congenital hydrocephalus, 217–229
Congenital malformations
   of vertebral articular processes in dogs, 307–326 (See also Vertebral articular processes, in dogs, congenital malformations of)
Craniocervical junction abnormalities (CJAs)
   in dogs, 243–251 (See also specific types, e.g., Atlantooccipital overlap (AOO))
   AOO, 243–245
   atlantoaxial dural bands, 246–247
   dens abnormalities, 247–248
   OAAMs, 245–246
CSF. See Cerebrospinal fluid (CSF)
CT. See Computed tomography (CT)
Cyst(s)
   choroid plexus, 259–260
   dermoid, 258, 288–289
   discal, 286–287
   epidermoid, 256–258, 288–289 (See also Epidermoid cysts)
   extradural synovial, 278–281 (See also Extradural synovial cysts)
Cyst-like abnormalities of brain, 253–263. See also specific types, e.g., Epidermoid cysts
   choroid plexus cysts, 259–260
   dermoid cysts, 258
epidermoid cysts, 256–258
introduction, 253

D
Dens abnormalities, 247–248
Dermoid cysts, 258, 288–289
Dermoid sinuses, 287–288
Diencephalon
    development of, 209–212
Discal cysts, 286–287
Diverticulum(a)
    intracranial intra-arachnoid, 253–263 (See also Intracranial intra-arachnoid diverticula)
    spinal arachnoid, 281–286 (See also Spinal arachnoid diverticulum (SAD))
Dog(s)
    AOO in, 243–245 (See also Atlanto-occipital overlap (AOO))
    CJAs in, 243–251 (See also specific types and Craniocervical junction abnormalities (CJAs), in dogs)
    congenital malformations of thoracic vertebral bodies in
        kyphoscoliosis related to, 295–306 (See also Kyphoscoliosis, congenital malformations of thoracic vertebral bodies in dogs and)
        congenital malformations of vertebral articular processes in, 307–326 (See also Vertebral articular processes, in dogs, congenital malformations of)
Drainage issues
    surgical management of hydrocephalus and, 226
Dysplasia(s)
    articular process
        in dogs, 314–323

E
Embryonic development
    of CNS, 193–216 (See also Central nervous system (CNS), embryonic development of)
Epidermoid cysts, 256–258, 288–289
    clinical signs of, 256–257
    described, 256
    diagnosis of, 257–258
    pathophysiology of, 256
    treatment of, 258
Extradural synovial cysts, 278–281
    cause of, 278–279
    clinical signs of, 279
    diagnosis of, 279–281
    pathogenesis of, 278–279
    treatment of, 281

F
Fourth ventricle, 197
H
Hydrocephalus, **217–229**
congenital, **217–229**
diagnosis of, 220–221
imaging studies in, 220–221
evaluation of, 219–220
patient history in, 219
physical examination in, 219–220
introduction, 217–219
treatment of, 221–226
medical, 221–223
prognosis after, 226–227
surgical, 223–224
complications of, 224–226
indications for, 223
types of, 219

I
Infection(s)
surgical management of hydrocephalus and, 224
Interbrain
development of, 209–212
Intracranial intra-arachnoid diverticula, **253–263**
clinical signs of, 254–255
described, 254
diagnosis of, 255–256
introduction, 253
pathophysiology of, 254
treatment of, 256

K
Kyphoscoliosis
congenital malformations of thoracic vertebral bodies in dogs and, **295–306**
clinical features of, 297–299
diagnosis of
imaging modalities in, 299–301
management of, 302–304
medical, 302
surgical, 302–304
overview of, 295–296
terminology related to, 295–296
Kyphosis, **295–306**
clinical features of, 297–299
diagnosis of
imaging modalities in, 299–301
management of, 302–304
medical, 302
surgical, 302–304
overview of, 295–296
terminology related to, 295–296

M
Magnetic resonance imaging (MRI)
in hydrocephalus diagnosis, 221
Mechanical failure
surgical management of hydrocephalus and, 226
Medulla oblongata
development of, 204–207
Medulla spinalis
development of, 199–204 (See also Spinal cord)
Mesencephalic aqueduct, 196
Mesencephalon, 195
development of, 208–209
Mesoderm, 194
Metencephalon
development of, 207–208
Midbrain
development of, 208–209
MRI. See Magnetic resonance imaging (MRI)
Myelencephalon
development of, 204–207

N
Neural canal, 194
Neural crest
development of, 201–204
Neural crest cells, 194
Neural folds, 194
Neural plate, 194
Neural tube
embryonic development of, 194–199
cell differentiation in, 197–199
Neural tube defects (NTDs), 327–345
causes of, 331–333
classification of
nomenclature in, 328, 329
clinical signs of, 334–339
described, 327–328
diagnosis of, 334–341
CSF analysis in, 341
imaging modalities in, 339–341
signalment in, 334
embryology of, 328–330
introduction, 327–328
pathogenesis of, 329–331
pathologic findings in, 334
treatment of, 341–343
Neural (continued)
  medical, 341–342
  responsible breeding in, 343
  surgical, 342–343
Neurogenesis, 199
NTDs. See Neural tube defects (NTDs)

O
OAAMs. See Occipitoatlantoaxial malformations (OAAMs)
Occipitoatlantoaxial malformations (OAAMs), 245–246

P
Pons
  development of, 207–208
Prosencephalon, 195

R
Rhombencephalon, 195–197

S
SAD. See Spinal arachnoid diverticula (SAD)
Sinus(es)
  dermoid, 287–288
Spinal arachnoid diverticula (SAD), 281–286
  causes of, 281–282
  clinical signs of, 283
  described, 281
  diagnosis of, 283–285
  histopathologic findings, 285
  pathogenesis of, 281–283
  treatment of, 285–286
  types of, 281
Spinal cord
  cystic abnormalities of, 277–293 (See also specific abnormalities)
    dermoid and epidermoid cysts, 288–289
    dermoid sinuses, 287–288
    discal cysts, 286–287
    introduction, 277–278
    SAD, 281–286
    development of, 199–204
Spine
  regions of, 307
Synovial cysts
  extradural, 278–281 (See also Extradural synovial cysts)
Telencephalic vesicles, 196
Telencephalon
  development of, 212–216
Third ventricle, 196
Thoracic vertebral bodies
  congenital malformations of
    in dogs
      kyphoscoliosis related to, 295–306 (See also Kyphoscoliosis, congenital malformations of thoracic vertebral bodies in dogs and)

Ultrasound
  in hydrocephalus diagnosis, 220–221

Vertebral articular processes
  in dogs
    congenital malformations of, 307–326
      anatomy related to, 307–314
      cervical vertebrae, 308–311
      described, 314–323
      diagnostic imaging of, 323
      dysplasia, 314–323
      lumbar vertebrae, 314
      physiology related to, 307–314
      thoracic vertebrae, 311–314
      treatment of, 323
Vertebral column
  cystic abnormalities of, 277–293 (See also specific abnormalities)
    extradural synovial cysts, 278–281
    introduction, 277–278