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Contents

Yazarlar	5
Editörün Notu	6
Contents	7
Chapter 1.....	37
ATRA (all-trans retinoik asit) Tedavisi Kullanılan Akut Promiyelositik Lösemili Hastada Akut Miyokard Enfarktusu	37
(Ahmet Kaya, Mehmet Ali Erkurt).....	37
1. Giriş	39
2.Vaka Sunumu:.....	40
3.Sonuç:	43
4.Tartışma:	43
5.Çözüm:	45
6.Çıkar Çatışması:	45
7.İnsan Etiği:	45
8.Referanslar:.....	45
Chapter 2.....	49
Dental İmplantlar ve Osseointegrasyon	49
(Anıl Özyurt).....	49
1. Giriş	51
2. Dental İmplantlar.....	51
2.1.Dental implant tipleri.....	51
2.1.1 Kemik içi implantlar	52
2.1.2. Subperiosteal implantlar	53
2.1.3. Transosseoz implantlar	53
2.1.4. Ekstraoral implantlar	54
2.2. Dental implantlarda kullanılan materyaller	54

2.2.1. Titanyum ve titanyum alaşımları.....	54
2.2.2. Seramikler	55
2.2.3. Polimerler	57
3.Osseointegrasyon.....	57
3.1.Osseointegrasyona etki eden faktörler	59
Teşekkür.....	59
4.Referanslar	59
Chapter 3.....	63
Chondroitin Sulfate and Its Clinical Applications in Different Fields	63
(Ayşe Şebnem Erenler, Tuba Ünver, Tugba Raika Kıran)	63
.....	63
CS application areas	67
1. Use of CS for the treatment of OA	68
2. Antiviral and antiinfective use of CS.....	69
3. The use of CS in tissue regeneration and engineering	69
4. The relationship of CS in the diagnosis and treatment of cancer.....	70
5. Using CS as hydrogel	70
6. The use of CS as an anti-inflammatory drug	71
7. The use of CS as anticoagulant.....	72
8. References.....	73
Chapter 4.....	79
Sızdıran Bağırsak Sendromu ve Mikrobiyota	79
(Azimet Yalçın Buğdaycı)	79
1. Giriş	81
2. Etiyoloji	82
3. Patofizyoloji.....	83
4. Hastalığın Klinik Özellikleri.....	84
5. Tanı.....	84
6. Tedavi	85
6.1. Diyet.....	85

6.2. Probiyotikler ve Prebiyotikler	86
6.3. Besin Takviyeleri	87
6.3.1. Aminoasitler	87
6.3.2. Vitaminler	87
6.3.3. Fitokimyasallar.....	88
6.4. İlaçlar.....	88
6.5. Bağırsak Mikrobiyotası.....	90
7. Referanslar	93
Chapter 5.....	97
Oral ve Maksillofasiyal Cerrahide Minimal İnvaziv Girişimler	97
(Burcu Karakuş, Fırat Selvi)	97
1. Giriş	99
2. Endoskopik Girişimlerle Tükürük Bezi Taşlarının Tedavisi	99
2.2. Cerrahi Tekniğin Uygulanması	101
3. Minimal İnvaziv Yöntemler Kullanılarak Dental İmplant Uygulamalarında Densah Frezler'inin Kullanımı	104
4. Minimal İnvaziv Flepsiz Dental İmplant Cerrahisi	106
4.1. Flepsiz İmplant Cerrahisinin Avantajları	106
4.2. Flepsiz İmplant Cerrahisinin Dezavantajları.....	107
4.3. Tekniğin Uygulanması	108
5. All On Four Uygulamaları.....	109
6. Robotik Dental İmplant Uygulamaları.....	110
7. Bilgisayar Destekli Kişiyi Özel Üretilen Osteotomi Kılavuzlarıyla Gerçekleştirilen Ortognatik Cerrahi Operasyonları	112
8. Piezoelektrik Kemik Cerrahisi Operasyonları.....	114
9. Kondil Kırıklarının Endoskopik Tedavisi.....	116
9.1. Ekstraoral Endoskopi Tekniğinin Uygulanması	116
10. Minimal İnvaziv Kondilektomi Uygulamaları	117
11. Sinüs Membranı Yükseltilmesinde Hidrolik Basınç Kullanımı	118
12. Referanslar	120

Chapter 6.....	129
Incidentally Detected Nodular Opacities on Chest Radiographs: A Prevalence Study	129
(Burcu Korkut, Nevin Köremzli Keskin, Beyza Şahin, Didem Adahan)	129
1. Introduction.....	131
2. Materials and Methods	132
3. Results	132
4. Discussion	135
5. References.....	137
Chapter 7.....	139
Baş ve Boyun Kanserlerinde Oksidatif DNA Hasarının (8-okso -2'deoksiguanozin) Önemi	139
(Derya Çay Demir, İbrahim Hakkı Yörük, Halit Demir). 139	
1. Kanser	141
1.1. Baş ve Boyun Kanserleri.....	142
1.2. Oksidatif DNA Hasarı (8-okso -2'deoksiguanozin).....	144
2. Sonuç	147
3. Referanslar	149
Chapter 8.....	155
Diyabetik Hayvan Modelleri.....	155
(Ali Doğan Dursun, Hümevra Çelik)	155
1. Diyabetes Mellitus	157
1.1. Tip I diyabet:	158
1.2. Tip II diyabet:	158
1.3. Beta hücrelerinde genetik defekt (MODY)	159
1.4. Gestasyonel diabetes mellitus.....	159
2. Diyabetik Hayvan Modelleri.....	160
2.1. Genetik diyabet modelleri:.....	160
2.2. Otoimmün diyabet modelleri:.....	161

2.3. Kimyasal diyabet modelleri:	162
2.4. Viral diyabet modelleri:	163
2.5. Hormonal diyabet modelleri:	164
2.6. Cerrahi diyabet modelleri:.....	164
2.7. Beslenme modeli ile diyabet oluşturma:	164
2.8. Kombine modellerle diyabet oluşturma:	165
3. Referanslar	166
Chapter 9.....	173
"Polyploidy"-Double-edged Knife: Traces of Polyploidy in Embryogenesis and Tumorigenesis.....	173
(Eda Acikgoz).....	173
1. Introduction.....	175
2. Polyploidy	176
2.1. Cellular and molecular mechanisms underlying the formation of polyploidy in animals	177
2.1.1. Endoreplication	177
2.1.2. Mitotic Slippage.....	177
2.1.3. Cytokinesis Failure.....	178
2.1.4. Cell-Cell Fusion	178
2.1.5. Cell Cannibalism	179
2.2. Polyploidy in Mammalian Embryonic Development	180
2.3. Polyploidy in Tumorigenesis.....	181
2.3.1. Missing Pieces of The Puzzle: Deciphering Similar Signatures Between Cancer Stem Cells and Polyploid Giant Cancer Cells	183
3. Conclusion	185
4. References.....	186
Chapter 10.....	195
Dentin Yapısı, Dentin Çürüğü ve Biyolojik Remineralizasyon	195
(Elif Kuru).....	195
1. Giriş	197

2. Dentin Dokusu ve Yapısal Özellikleri.....	197
2.1. Dentinin organik içeriği	198
2.2. Dentinin inorganik içeriği	198
3. Dentin Çürüğü.....	200
3.1. Normal dentin tabakası.....	200
3.2. Subtransparan dentin tabakası	200
3.3. Transparan dentin tabakası.....	200
3.4. Bulanık dentin tabakası	200
3.5. Bakteri invazyon tabakası.....	201
4. Dentinde Demineralizasyon	201
5. Dentinde Remineralizasyon	201
5.1. İyon aracılı klasik kristalizasyon teorisi.....	202
5.2. Klasik olmayan kristalizasyon teorisi	202
5.3. Dentinde biyomimetik remineralizasyon.....	202
6. Sonuç	203
7. Referanslar	203
Chapter 11.....	207
Common <i>In-Vivo</i> Gene Modification Tools in Medical Mycology.....	207
(Engin Kaplan)	207
1. Introduction.....	209
2. Homologous Recombination as a Genome Editing Tool	210
3. Nuclease-Mediated Gene Editing Tools	211
3.1. CRISPR/Cas9-mediated genome editing.....	212
3.2. Applications of CRISPR/Cas9 in medically important fungi	213
4. Conclusion	215
5. References.....	215
Chapter 12.....	221
Biyokimyasal Analizlerde Spektrofotometrik Ölçüm... 221	
(Fatih Hacımustafaoğlu)	221

1. Giriş	223
2. Spektrofotometrik Ölçüm	228
2.1. Bazı önemli terimler	229
2.2. Spektrofotometre cihazının temel bileşenleri	230
2.3. Kinetik okuma	235
2.4. End point okuma	235
2.5. Konsantrasyonu ölçmek için kullanılan yöntemler	235
2.6. Çok Küçük Örnek Hacimlerinde Absorbans Ölçümleri	240
3. Referanslar	242
Chapter 13.....	245
Pediatric Rehabilitasyona Güncel Bakış: Hippoterapi	245
(Funda Şekercioğlu, Metehan Yana, Musa Güneş)	245
1. Giriş	247
1.1. Hippoterapi Nedir?	247
1.2. Hippoterapinin Tarihçesi.....	248
1.3. Hippoterapide Kullanılan Atların Özellikleri	249
1.4. Hippoterapinin Genel Faydaları.....	249
1.5. Hippoterapinin Pediatric Hastalıklarda Kullanımı.....	250
1.6. Hippoterapi Simülatörü	252
2. Tartışma ve Sonuç.....	252
3. Kaynaklar.....	255
Chapter 14.....	259
Penetrating Eye Traumas	259
(Gamze Yıldırım Biçer).....	259
1. Introduction.....	261
2. Terminology and Classification	261
3. Etiology	262
4. Approach and Diagnosis	262
5. Treatment	263
6. Complications:	263

7. Community Education and Preventive Medicine	263
8. References.....	264
Chapter 15.....	267
Parapnömonik Plevral Effüzyonlara Yaklaşım	267
(Gökçen Sevilgen)	267
1. Giriş	269
1.1. Parapnömonik Plevral Effüzyon Tanımı ve Etiyolojisi	269
1.2. Parapnömonik Plevral Effüzyon Fizyopatoloji.....	270
1.2.1. Parapnömonik Plevral Effüzyon Tanı ve Tedavi	271
1.2.2. Parapnömonik Plevral Effüzyonda Tedavi	271
1.2.3. Terapötik Torasentez	272
1.2.4. Tüp Torakostomi.....	272
1.2.5. İntraplevral Fibrinolitik(IPFT) Tedavi	272
1.2.6. Cerrahi Tedavi	273
2. Sonuç	274
3. Referanslar	276
Chapter 16.....	281
Probiyotiklerin Bağırsak Fizyolojisine ve Florasına	281
Katkısı	281
(Suna Kızılyıldırım, Hikmet Yeter Çoğun)	281
Özet.....	283
1. Giriş	283
2. Probiyotikler ve bağırsak fizyolojisi.....	284
3. Probiyotikler ve Bağırsak Florası.....	285
3.1. Sonuç ve Öneriler	286
4. Referanslar	286
Chapter 17.....	289
Dudak-Damak Yarıklarının Tedavisinde Temel İlkeler Ve	289
Zamanlama	289
(Parvin Jafarguliyev, Hümeysra Kocaelli)	289

Özet.....	291
Abstract	292
Tarihçe	293
1. Giriş	293
2. Epidemiyoloji	294
3. Etiyoloji - Genetik Ve Embriyoloji.....	295
4. Sınıflandırma.....	297
5. Yarıklı Bireyin İnterdisipliner Yönetimi.....	300
6. Prenatal Diyagnoz	301
7. Genel Değerlendirme	301
7.1. Besleme ve beslenme	301
7.2. Kulak, burun ve boğaz değerlendirmesi.....	302
8. Ameliyat Öncesi Ortopedi.....	302
9. Yarıklı Dudak Onarımı.....	304
9.1. Tek taraflı yarıklı dudak.....	305
9.1.1. Cerrahi anatomi	305
9.1.2. Tek taraflı yarıklı dudak onarımının evrimi	305
9.1.3. Tek taraflı dudak ve burun yarıklarının onarım prensipleri	306
9.2. Bilateral yarıklı dudak	307
9.2.1. Cerrahi Anatomi	307
9.2.2. Bilateral yarıklı dudak onarımının evrimi	307
9.2.3. Bilateral dudak ve burun yarıklarının onarım prensipleri	308
10. Yarıklı Damak Onarımı	309
10.1. Onarım zamanlaması	310
10.2. Tek aşamalı ve iki aşamalı damak onarımı	311
10.3. Cerrahi anatomi	311
10.4. Yarıklı damak tedavisi ve onarımının amaçları:	311
10.5. Damak onarımının ilke ve teknikleri.....	312
10.6. Postoperatif Bakım.....	313
10.7. Komplikasyonlar ve yönetimi	313
11. Klinik Sonuçlar	314

12.Yarıklı İlgili Sorunların Sekonder Düzeltilmesi	315
12.1. Konuşma ve velofarengal disfonksiyon.....	315
12.2. Oronazal fistüllerin düzeltilmesi.....	317
13. Alveolar Yarıklı Onarımı.....	317
13.1. Yarıklı çizgisinde olmayan dişlerin yeniden konumlandırılması ...	320
14. Genel Terapötik Hususlar.....	320
14.1. Havayolu Endişeleri	320
14.2. Beslenme	321
14.3. Kol Korumaları	321
14.4. Antibiyotikler	321
14.5. Steroidler	321
14.6. Analjezi	321
15. Gelecekteki Hususlar	322
16. Kaynakça.....	323
Chapter 18.....	327
Periodontoloji ve Ortodonti İlişkisi.....	327
(Muhammet Burak Yavuz, Büşra Seda İmamoğlu, Sevda Kurt-Bayrakdar)	327
1. Giriş	329
2. Ortodontik Tedavilerin Periodontal Dokulara Etkisi.....	330
2.1. Ortodontik Tedavilerin Periodontal Açından Yararları	330
2.2. Ortodontik Tedavi ile Gelişen Periodontal Komplikasyonlar	330
3. Periodontal Rahatsızlık Nedeniyle Meydana Gelen Ortodontik Anomaliler.....	333
3.1. Patolojik Diş Migrasyonu	333
3.2.Flaring ve Diastema	334
3.3.Travmatik Oklüzyon ve Mobilite	334
4.Ortodontik Tedavi Öncesi Periodontal Muayene	335
5.Preortodontik Periodontal Tedavi.....	336
5.1.Preortodontik Diş Eti Cerrahisi.....	336
5.2.Preortodontik Kemik Cerrahisi.....	337

5.2.1.Osseöz Kraterler.....	337
5.2.2.Üç Duvarlı Kemikli Defekt.....	338
5.2.3.Furkasyon Defektleri.....	338
6.Periodontal Problemlerin Ortodontik Tedavisi	339
6.1.İleri Düzey Horizontal Kemik Kaybı.....	339
6.2.Hemiseptal Defekt	340
6.3.Furkasyon Defektleri	340
6.4.Kırık Dişler	341
6.5.Düzensiz Gingival Marjinler ve İnterdental Papil Kaybı.....	343
6.6.Gummy Smile	344
7.Postortodontik Periodontal Tedavi ve Stabilizasyon	344
8.Ortodontik Tedavi Sırasında Periodontal Sağlığın Korunması	346
9.Referanslar	348
Chapter 19.....	355
Human Papilloma Virüs Aşı Uygulamaları	355
(Merve Özkan, Belgin Yıldırım, Nazife Koç).....	355
1. Giriş	357
2. Human Papilloma Virüs	358
3. Human Papilloma Virüs Aşları	360
4. Ülkemizde ve Dünyada Aşı Uygulamaları.....	364
5. Sonuç ve Öneriler	367
6. Referanslar	367
Chapter 20.....	373
Bilateral Total Diz Protezi Uygulanan Hastalarda	
Traneksamik Asit Uygulama Yöntemlerinin Kan	
Transfüzyonu İhtiyacına Etkisi	373
(Murat Saylık)	373
1. Giriş	375
2. Hastalar ve yöntem	376
3. Bulgular	377
4. Tartışma	378

5. Kaynaklar.....	380
Chapter 21.....	385
Incidence of Additional Pathologies in the Setting of Arthroscopic Clavicle Distal end Resection.....	385
(Murat Saylık)	385
1. Introduction.....	387
2. Patients and method.....	388
3. Statistical Analysis	389
4. Findings.....	389
5. Discussion	391
6. Conclusion	393
7. References.....	393
Chapter 22.....	397
Varicocele	397
(Müslüm Özer).....	397
1. Introduction.....	399
2. Vascular Anatomy of the Testicle.....	399
2.1. Internal spermatic (testicular) artery	399
2.2. External spermatic (Cremasteric) artery	399
2.3. Deferential (Vasal) artery (A.ductus deferentis)	399
2.4. External pudental artery:	400
2.5. Testicular-Scrotal Venous System	400
3. Varicocele	400
4. Diagnosis.....	401
5. Treatment	401
5.1. Methods in the Treatment of Varicocele	402
7. References.....	402
Chapter 23.....	405
Benign Prostate Hyperplasia.....	405
(Müslüm Özer).....	405

1. Introduction.....	407
2. Prostate Embryology.....	407
3. Prostate Anatomy.....	407
3.1 Bleeding of the Prostate	408
3.2 Innervation of the Prostate	408
4. Prostate Physiology	408
5. Epidemiology, Etiology and Pathophysiology	409
6. Clinic.....	409
7. Diagnosis.....	410
7.1. Story.....	410
7.2. Physical Examination.....	410
7.3. International Prostate Symptom Score	410
7.4. Voiding Diary	411
7.5. Lab.....	411
7.6. Post-void Residual Urine.....	411
7.7. Uroflowmetry	411
7.8. Transabdominal or Transrectal Ultrasonography	412
8. Treatment	412
8.1. Watching Waiting	412
8.2. Medical Treatment	412
8.2.1. Treatment with Alpha Adrenergic Blockers	412
8.2.2. Androgen Suppression Therapy	413
8.2.3. Combination therapy	413
8.3. Surgical treatment.....	413
9. Types of Surgery	413
9.1. Open Prostatectomy	413
9.2. Transurethral resection of the prostate (TUR-P)	413
9.3. Transurethral Prostate Incision (TUIP).....	414
9.4. Transturethral Needle Ablation of the Prostate (TUNA)	414
9.5. Ho:YAG (Holmium:Yttrium Aluminum garnet) Laser	414
9.6. Other Surgical Treatment Methods	414

10. References.....	415
Chapter 24.....	419
İşçi Sağlığı ve İş Yeri Hemşireliği	419
(Nazife Koç, Belgin Yıldırım, Merve Özkan).....	419
1. Giriş	421
2. İş Sağlığı ve Güvenliği Tarihçesi	422
2.1. İş Sağlığı.....	422
2.2. İş Güvenliği.....	423
2.3. İş Kazası.....	424
2.4. Meslek Hastalığı	425
2.4.1. Meslek Hastalıklarından Korunma	425
2.5. Tehlike ve Risk Kavramı	426
2.5.1. Risk Değerlendirmesi	426
3. İş Yeri Ortamı Risk Faktörleri.....	427
3.1. Fiziksel Faktörler	427
3.2. Kimyasal Faktörler	428
3.3. Biyolojik Faktörler.....	429
3.4. Psikososyal Faktörler	429
4. İşyeri Hemşireliği	429
4.1. İşyeri Hemşiresinin Görev Yetki ve Sorumlulukları	430
5. Sonuç	431
6. Kaynakça.....	431
Chapter 25.....	437
Aromaterapi ve Sağlık	437
(Nuriye Hilal Taştekin, Arif Ahmet Başaran)	437
1. Geçmişten Günümüze Aromaterapi Yolculuğu	439
2. Aromaterapi Yağları.....	440
3. Uçucu Yağlar.....	441
3.1. Uçucu Yağların Temel Özellikleri ve Elde Edilişleri	441
3.2. Doğru Uçucu Yağ	444

3.3. Uçucu Yağlarda Kalite.....	445
3.4. Uçucu Yağların Uygulama Yolları	446
3.5. Sıklıkla Kullanılan Uçucu Yağlar.....	447
3.6. Uçucu Yağların Etkileri ve Kullanım Alanları	448
3.7. Uçucu Yağların Parfümerideki Yeri	451
3.8. Pazarlamada Kokunun Etkisi.....	453
4. Güvenli ve Etkili Aromaterapi	453
5. Referanslar	454
Chapter 26.....	459
Determining the Effect of Narration and Sample Case Watching Methods on Nursing Students' Views on Euthanasia.....	459
(Serap Torun, Gülşah Kumaş, Osman Bilgin)	459
1. Introduction.....	461
2. Method.....	464
2.1. Aim.....	464
2.2. Research Model.....	464
2.3. Population and Sampling.....	464
2.4. Data Collection Tool.....	464
2.5. Data Collection	465
2.6. Narration and sample case watching material	465
2.7. Analysis of Data.....	465
2.8. Limitations of the Research	466
2.9. Ethical Dimension of the Research	466
3. Findings	466
4. Discussion	469
5. Conclusion	472
6. References.....	472
Chapter 27.....	477
Sleep.....	477
(Osman Koray Turhan).....	477

1. Introduction.....	479
2. Insomnia	481
3. Steps to be followed in the treatment of insomnia patients	483
4. References.....	483
Chapter 28.....	485
Polypoidal Choroidal Vasculopathy	485
(Muhammet Latif Tuncer, Ömer Özer)	485
1. Introduction.....	487
2. Epidemiology	487
3. Pathogenesis	487
4. Clinic.....	488
5. Risk Factors.....	488
6. Signs/Symptoms	489
7. Diagnosis.....	489
8. Classification	489
9. Differential Diagnosis.....	490
10. Prognosis.....	490
11. Treatment	490
11.1. Laser Photocoagulation.....	490
11.2. Photodynamic Therapy with Verteporfin	490
11.3. Anti-VEGF Agents	491
12. References.....	492
Chapter 29.....	495
Acute Appendicitis	495
(Ömer Yüceer)	495
1. Introduction.....	497
2. Anatomy:	497
3. Etiology:.....	497
4. Clinical:	498
5. Differential Diagnosis:	498

6. Diagnosis:	499
7. Treatment:.....	500
8. References.....	500
Chapter 30.....	503
Aralık Açlık İle Sağlıklı Yaşam Arasındaki İlişki	503
(Özgen Kılıç Erkek)	503
1. Giriş	505
2. Aralıklı Açlığın Tanımı	505
2.1. Aralıklı Açlık Protokollerinin Tipleri.....	506
2.2. Aralıklı Açlık protokollerinin fizyolojik etkileri	508
2.3. Açlık ile aktive olan fizyolojik mekanizmalar	509
2.3.1 Otofaji.....	510
2.3.2. Mitokondriyal biyogenez ve DNA stres direnç genleri	510
3. Referanslar	511
Chapter 31.....	515
Useage of Ion Selective Electrodes in Healthcare	515
(Ozlem Sogut)	515
1. Introduction.....	517
2. General Information about ISEs	518
2.1. Classification	518
2.2. Properties	518
2.3. Advantages and Disadvantages	519
3. Usage of ISEs in Clinical Analyses	519
3.1.Hydrogen ISEs	519
3.2. Sodium and Potassium ISEs	520
3.3. Fluoride ISE.....	521
3.4. Calcium and Magnesium ISE	522
3.5. Modern ISEs.....	523
4. Conclusion	523
5. References.....	524

Chapter 32.....	531
Yağ Dokusu Hormonları.....	531
(Rabia Tüfekçi, Nurcan Dönmez).....	531
1. Giriş.....	533
2.Yağ Dokusu.....	535
2.1. Kahverengi Yağ Dokusu.....	535
2.2. Beyaz Yağ Dokusu.....	535
2.3. Bej Yağ Dokusu.....	536
3. Yağ Dokusu Hormonları.....	536
3.1. Leptin.....	537
3.2. Adiponektin (Adinopektin).....	539
3.3. Resistin.....	540
3.4. Tümör Nekrozis Faktör (TNF- α).....	541
3.5. İnterlökin 6 (IL-6).....	542
3.6. Visfatin.....	542
3.7. Apelin.....	543
3.8. Adipsin.....	544
3.9. Asilasyon Stimulating Protein (ASP).....	544
3.10. Adiposit Renin Anjiyotensin Sistemi Proteinleri (RAS).....	544
3.11. Plazminojen Aktivatör İnhibitörü-1 (PAI-1).....	545
3.12. Hepsidin.....	545
3.13. Diğer Yağ Dokusu Sitokinleri.....	546
4. Sonuç.....	547
5. Referanslar.....	547
Chapter 33.....	561
Diş Hekimliğinde Yapay Zekâ Teknolojisindeki Güncel Gelişmeler.....	561
(Sema Nur Sevinç Gül, Alparslan Dilsiz).....	561
1. Giriş.....	563
2. Yapay Zekâ Nedir?.....	563

3. Diş Hekimliği Alanında Yapay Zekânın Yeri	565
3.1. Oral Diagnozda Yapay Zekâ	565
3.2. Oral Radyolojide Yapay Zekâ	566
3.3. İmplantolojide Yapay Zekâ	567
3.4. Periodontolojide Yapay Zekâ	567
3.5. Restoratif Diş Tedavisinde Yapay Zekâ	568
3.6. Endodontide Yapay Zekâ	568
3.7. Protetik Diş Tedavisinde Yapay Zekâ	569
3.8. Ağız, Diş ve Çene Cerrahisinde Yapay Zekâ	569
3.9. Ortodontide Yapay Zekâ	570
4. Referanslar	571
Chapter 34.....	579
Fiber İle Güçlendirilmiş Kompozitler	579
(Mehmet Semih Velioglu, Nimet Ünlü).....	579
1. Giriş	581
1.1. Fiber İle Güçlendirilmiş Kompozitlerin Sınıflaması.....	582
1.2. Fiber ile Güçlendirilmiş Kompozitlerin Performansın Etkileyen Faktörler.....	584
1.2.1. Ara Faz	584
1.2.2. Ön İşlemler	584
1.2.3. Boyut Etkisi	584
1.2.4. Kesit	584
1.2.5. Fiber Hacmi	585
1.2.6. Fiber oryantasyonu	585
1.2.7. Fiberin matrikse adezyonu	586
1.2.8. Fiberin doyurulması.....	586
1.2.9. Fiber matriksin su absorpsiyonu	587
1.3. Fiber ile Güçlendirilmiş kompozitlerin Kullanım Alanları	587
2.Sonuç	588
3.Referanslar	589
Chapter 35.....	593

Primeri Bilinmeyen Kanser Hastalarının Değerlendirilmesinde Flor-18 Fluorodeoksiglukoz PET/BT'nin Katkısı	593
(Sertaç Asa)	593
1. Giriş	595
2. Primeri bilinmeyen kanserde inisiyal değerlendirme	595
3. FDG PET Görüntüleme	596
4. FDG PET/BT'nin PBK'da kullanımı	598
5. Sonuç ve Gelecek Beklentiler	600
6. Referanslar	601
Chapter 36.....	604
Genotoksisite Tayin Yöntemleri	604
(Tuğçe Duran, Zeliha Tuncer)	604
1. Giriş	606
1.1. Ames (Bakteriyel Ters Mutasyon) Testi	607
1.2. COMET Testi	608
1.3. Mikronükleus (MN) Testi	610
1.4. Kardeş Kromatit Değişimi (KKD) Testi.....	612
1.5. Kromozom Anormallikleri (KA) Testi	613
2. Referanslar	614
Chapter 37.....	619
Pandemik Covid-19 Mücadelesinin Önemli Aktörleri: Bitkisel ve Hayvansal Antiviral Ürünler	619
(Fadime Tonbak, Tuncer Çakmak)	619
1. Giriş	621
1.1. Antiviral Ürünlerin Covid-19'la Mücadele Yolları.....	623
1.2. Antiviral Etkileriyle Fitoterapi	624
1.3. Bağışıklık Düzenleyici ve Antiviral Etkili Bazı Bitkisel Gıdalar	625
1.4. Hayvansal Kökenli Antiviral Etkili Bazı Gıdalar	626
a- Yoğurt	626

b- Kefir	626
c- Arı Ürünleri.....	627
1.5. Bitkisel Kökenli Antiviral Etkili Bazı Gıdalar	628
a- Mantar.....	628
b- Çörek otu	628
c- Sarımsak.....	628
d- Tarçın.....	629
e- Meyan Kökü.....	629
f- Karabiber	629
2. Sonuç	630
3. Referanslar	630
Chapter 38.....	639
Aortic Stenosis	639
(Yakup Çetinkaya)	639
1. Introduction.....	641
2. Physiopathology:	641
3. Etiology:.....	641
4. Clinic:	642
5. Syncope.....	642
6. Physical Examination:	642
7. Diagnostic Methods:.....	643
7.1. Electrocardiography:	643
7.2. Teleradiography:.....	643
7.3. Echocardiography:.....	643
7.4. Transesophageal Echocardiography (TEE)	644
7.5. Low-dose Dobutamine Echocardiography:.....	644
7.6. Exercise Test:	644
7.7. Heart Catheterization	645
7.8. Differential Diagnosis.....	646
8. Treatment	647

8.1. Medical Treatment	647
8.1.1. Medical Treatment in Asymptomatic Patients:	647
8.1.2. Medical Treatment in Symptomatic Patients:.....	647
8.2. Statin Therapy:	648
8.3. Antibiotic Prophylaxis:	648
8.4. Surgical Treatment	648
8.5. Aortic Pseudo-Stenosis:.....	648
8.6. Aortic Valve Replacement	649
8.7. Mechanical Covers:	650
8.8. Bioprostheses:.....	650
9. Percutaneous Interventional Treatment Methods	651
9.1. Percutaneous Aortic Balloon Valvuloplasty:	651
9.2. Transcatheter Aortic Valve Implantation (TAVI):.....	651
10. Natural Course and Prognosis	652
11. References:	653
Chapter 39.....	655
Paranasal Sinüs Anatomisi ve Varyasyonları	655
(Ali Keleş)	655
1. Giriş	657
2. Sinus Frontalis.....	658
3. Sinus Maxillaris (Cavitas Higmori).....	658
4. Cellulae Ethmoidales.....	659
5. Sinus Sphenoidalis.....	660
6. Paranasal Sinüs Varyasyonları	662
7. Referanslar	666
Chapter 40.....	673
Temporomandibular Eklem Disfonksiyonu (TMD)	
Tedavisinde Cerrahi Olmayan Yaklaşımlar	673
(Ayşe Selenge Akbulut)	673
1. Giriş	675

2. TMD Tedavisinde Cerrahi Olmayan Yaklaşımlar	675
2.1. Hasta Eğitimi ve Yaşam Tarzında Değişikliklerin Yapılması	676
2.2. Oklüzal Ayarlamalar ve Ortodontik Yaklaşımlar	676
2.3. Fizyoterapik Yaklaşımlar	677
2.4. Geleneksel ve Tamamlayıcı Tıp Yaklaşımları.....	680
2.5. Psikoterapik Yaklaşımlar	680
2.6. Farmakolojik Yaklaşımlar.....	681
3. Sonuç	682
4. Referanslar	682
Chapter 41.....	687
Thermogenic Adipocyte Metabolism.....	687
(Ayşegül Sümer, Öznur Demirtaş).....	687
1. Introduction.....	689
2. Adipose Tissue.....	690
2.1. Brown Adipose Tissue.....	693
2.2. Distribution of Thermogenic Adipocytes in the Body.....	694
2.3. Development And Origin Of Brown Adipose Tissue	695
3. Metabolic Events In Brown Adipose Tissue.....	697
3.1 Whole Body Energy Expenditure	697
3.2. Lipid Metabolism	697
3.3. Glucose Metabolism	697
4. References.....	699
Chapter 42.....	703
Thermogenesis And Factors Affecting Thermogenic Adipocytes.....	703
(Ayşegül Sümer, Öznur Demirtaş).....	703
1. Thermogenesis.....	705
2. Factors Affecting Thermogenic Adipocytes	708
2.1. Exposure to Chronic Cold.....	708
2.2. Exercise.....	709

2.3. Sympathetic Activators	711
2.4. Thyroid Hormone.....	711
2.5. Leptin.....	712
2.6. AMP-Activated Protein Kinase (AMPK) Activators	712
2.7. Fibroblast Growth Factors 21 (FGF21)	712
2.8. Prostaglandins	712
2.9. Bone Morphogenic Protein (BMP)	713
2.10. Factors Released from the Heart: Natriuretic Peptides (NP)	713
2.11. Retinaldehyde (Rald).....	713
2.12. Irisin.....	714
2.13. β -Aminoisobutyric Acid (BAIBA)	715
2.14. Peroxisome Proliferator Activated Receptor γ (PPAR γ) Ligands	715
2.15. Peroxisome Proliferator-Activated Receptor α (PPAR α) Ligands	715
2.16. Bile acids.....	715
2.17. Glucagon-Like Peptide-1 (GLP-1).....	715
3. References.....	719
Chapter 43.....	723
Memenin Selim ve İltihabi Hastalıkları.....	723
(Ceyhun Pekin).....	723
1. Giriş	725
2. Memenin Selim Hastalıklar	725
2.1 Gelişimsel Anomaliler	725
2.2. Enflamatuar Hastalıklar	725
2.3. Fibrokistik Değişiklikler	727
2.3.1. Non proliferatif bozukluklar	728
2.3.2. Atipisiz proliferatif bozukluklar	729
2.3.3 Atipili proliferatif bozukluklar	729
3. Kaynaklar	730
Chapter 44.....	735

Hemşire Yöneticilerin Kriz Yönetimine İlişkin Yaklaşımları.....	735
(Özdem Nurluöz, Samineh Esmaeilzadeh, Duygu Oktay)	735
1. Giriş	737
2. Kriz Nedir?	737
3. Kriz yönetimi,.....	739
4. Kriz Yönetiminde Yöneticilerin için Yöntemler	741
5. Kriz Yönetim Süreci	742
6. Kriz Döneminde Yönetim Yöneticilik ve Liderlik	742
7. Sağlık Kurumları Yönetiminde Kriz Yönetimi.....	743
8. Hemşirelik Hizmetleri Yönetiminde Kriz Yönetimi	743
9. Kriz yönetimi konusunda hemşire yöneticilerle ilgili öneriler;	744
10. Kaynakça	744
Chapter 45.....	749
İleri Nörogörüntüleme Yöntemi Voksel Tabanlı Morfometri (VBM-Voxel Based Morphometry)	749
(Fatma Yılmaz).....	749
1. Giriş	751
2. VBM Yönteminin Kullanım Alanları	753
3. VBM’de İşlem Basamakları.....	755
3.1. Eksen Dönüştürme:	755
3.2. Görüntü Reoryantasyonu	755
3.3. Gürültü (Noise) ve Artefakt Giderme	755
3.4. Uzaysal Normalizasyon (Spatial Normalization)	755
3.5. Modülasyon (Modulation).....	756
3.6. Segmentasyon (Segmentation)	756
3.7. Pürüzsüzleştirme (Smoothing).....	757
3.8. İstatistik Analizler	757
4. VBM Yönteminin Yetersizlikleri	757
5. Referanslar	758

Chapter 46.....	759
Hücrelerimiz Bizi Duyar mı? Epigenetik, Nöroplastisite ve Genetik Determinizm	759
(Hale Köksoy)	759
1. Giriş	761
1.1. Epigenetik Nedir?.....	762
1.2. Epigenetik, Stres ve Depresyon İlişkisi.....	764
2. Nöroplastisite ve Beyin.....	766
3. Genetik Determinizm	769
4. Sonuç ve Tartışma.....	772
5. Referanslar	773
Chapter 47.....	779
Covid-19 & Koku Alma, Tat Duyusu ve Ağız Sağlığı	779
(Hilal Şahin)	779
1. Giriş	781
2. Koku Alma ve Tat Duyusu	781
3. Ağız Sağlığı.....	785
4. Kaynakça.....	787
Chapter 48.....	793
Çölyak'ta Toplu Beslenme Sistemlerine Yönelik Glutensiz Mutfak Uygulamaları	793
(Gökhan Esmer, M. Ali Cebirbay)	793
1. Giriş	795
2. Çölyak'ın Tanımı ve Sınıflandırması	797
3. Çölyak'ın Etiyolojisi ve Epidemiyolojisi	799
4. Çölyak'ta Beslenme Tedavisi ve Önerileri	801
5. Toplu Beslenme Sistemlerinde Glutensiz Mutfak Uygulamaları	804
5.1. Ürünlerin üretiminde kullanılan glutensiz hammadde ve besinler	805
5.2. Glutensiz mutfak uygulamaları	811
6. Referanslar	823

Chapter 49.....	833
Veteriner Cerrahi Uygulamalarında Güncel Yaklaşımlar	833
(Özmen İstek)	833
1. Giriş	835
1.1. Dijital Çıkarma Anjiyografisi.....	835
1.2. Robotik Cerrahi	836
1.3. Veteriner Cerrahide Yapay Zekâ	838
1.4. Veteriner Cerrahi Alanında Baskı Uygulamaları.....	840
2. Referanslar	843
Chapter 50.....	849
Halitozis.....	849
(Şerif Şamil Kahraman)	849
1. Giriş	851
2. Halitozis İçin Risk Faktörleri	851
3. Halitozisin Sınıflandırılması	852
3.1 Fizyolojik Nedenler	852
3.2. Ekstraoral Nedenler	852
3.3. İntraoral Nedenler	854
3.4. Delüzyonel Halitozis	854
4. Halitoziste Tanı	855
5. Halitoziste Tedavi.....	855
6. Kaynaklar.....	856
Chapter 51.....	863
Flor-18 Fluorodeoksiglukoz Pozitron Emisyon Tomografisinin Nedeni Bilinmeyen Ateşte Hasta Yönetimine Katkısı	863
(Sertaç Asa).....	863
1. Giriş	865
2. Nedeni Bilinmeyen Ateşin Etiyolojisi	865

3. Nedeni Bilinmeyen Ateşte Tanı Basamakları.....	866
4. FDG PET Görüntüleme	867
4.1. FDG PET Görüntülemeye Hasta Hazırlığı	868
4.2. FDG PET Görüntülerinin Yorumlanması	869
4.3. FDG PET'in NBA'da kullanımı	870
4.4. NBA'da kullanılan diğer Radyonüklid Görüntüleme Yöntemlerinin FDG PET ile karşılaştırılması	871
5. Sonuç ve Gelecek Beklentiler.....	871
6. Referanslar	872
Chapter 52.....	877
General Information about Obesity and Obesity Surgery	877
(Şükrü Salih Toprak)	877
1. Introduction.....	879
2. Obesity in the World and In Our Country.....	879
3.Problems Caused By Obesity.....	880
4. Evaluation of Obesity and Treatment Options	881
5.Surgical Treatment	882
5.1. The Surgical Methods Used Are Grouped Under 4 Main Headings	882
5.1.1. Methods of Disrupting Absorption	882
5.1.2. Methods of Restricting Food Intake (volume reduction)	883
5.1.3. Combined Methods	883
5.1.4. Experimental methods	883
5. Contraindications to Bariatric Surgery	885
6. Definitive Treatment of Obesity	885
7. References.....	886
Chapter 53.....	889
Bel Ağrılarına Yaklaşım	889
(Yurdağül Bahran Muştu)	889
1. Giriş	891

2. Risk Faktörleri	891
3. Lumbosakral Omurga Anatomisi ve Biyomekaniği	892
4. Bel Ağrısı Nedenleri	893
5. Fizik Muayene	895
6. Tetkik ve Görüntüleme	896
7. Tedavi	896
8. Kaynaklar	897
Chapter 54	901
COVID-19 Enfeksiyonunun Akciğer Dokusu Üzerindeki Histopatolojik Etkileri	901
(Murat Çetin Rağbetli, Seda Keskin)	901
1. Koronavirüslerin Biyolojisi	903
2. Hastalığın Etiyolojisi	903
3. Hastalığın Belirtileri ve COVID-19 Patogenezi	904
4. COVID-19 Enfeksiyonunun Akciğerdeki Makroskopik ve Mikroskopik Bulguları	905
5. Kaynaklar	907
Chapter 55	913
Bakımdaki Sihirli Tılsım: Merhamet Hemşirelik ve Merhamet	913
(Hatice Azizoglu, Gül Ulay)	913
1. Merhamet Nedir?	915
2. Sonuç ve Öneriler	920
3. Referanslar	922
Chapter 56	925
The Effect of X Chromosome on Cancer Development	925
(Osman Demirhan)	925
1. Introduction	927
2. Some structural features of the X chromosome	927
3. Numerical X-chromosome aberrations and cancer	928

4. Cancer in syndromes related to X chromosome numerical aberrations	933
5. Conclusion	934
6. References.....	934
Chapter 57.....	939
Unknown Effects of the Fetal and Maternal Microchimerism	939
(Osman Demirhan)	939
1. Introduction.....	941
2. The mystery of microchimerism.....	942
3. Breastfeeding and microchimerism.....	942
4. The physiopathological effects of microchimerism.....	943
4.1. Autoimmune diseases	944
4.2. Cancer.....	947
4.3. Psychiatric Diseases.....	950
5. Conclusion	953
6. Referances	953

INSAC World Health Sciences

CHAPTER 21

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**Incidence of Additional Pathologies in the Setting of
Arthroscopic Clavicle Distal end Resection
(Murat Saylık)**

Incidence of Additional Pathologies in the Setting of Arthroscopic Clavicle Distal end Resection

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1. Introduction

Patients with AC joint degeneration may experience pain anywhere from the middle of the clavicle to the endpoint of the deltoid muscle and encounter limited motion in cross-body and overhead movements of the arm (1). Yet the complexity of the acromioclavicular (AC) joint and its multiple connections to the shoulder area creates potential diagnostic difficulties upon physical examination.

AC joint diarthrosis causes high load on the small joint surface and frequent degeneration of the joint structure. AC joint degeneration, along with cystic lesions at the distal end of the clavicle, osteolysis, and inferior osteophytic elongations in the joint, cause compression on the supraspinatus muscle (2). The condition may be clinically asymptomatic despite MR images showing signs of AC joint degeneration (extension in joint length and widening in joint diameter due to osteophyte development) (3). The rate of asymptomatic cases with AC joint degeneration detected in MR images is between 48% and 82% (4). Symptomatic cases should first be treated conservatively using non-steroid, intra-articular cortisone, immobilization, or physical therapy (5). In cases where conservative treatment does not achieve results, arthroscopic clavicle distal end resection (CDER) protects the upper-posterior ligament and capsule, does not impair joint stabilization, reduces pain quickly and provides functional recovery in the early period (6).

Due to the complex anatomical structure of the shoulder joint, it is not always possible to diagnose AC joint degeneration and / or additional pathologies through physical examination and imaging methods.

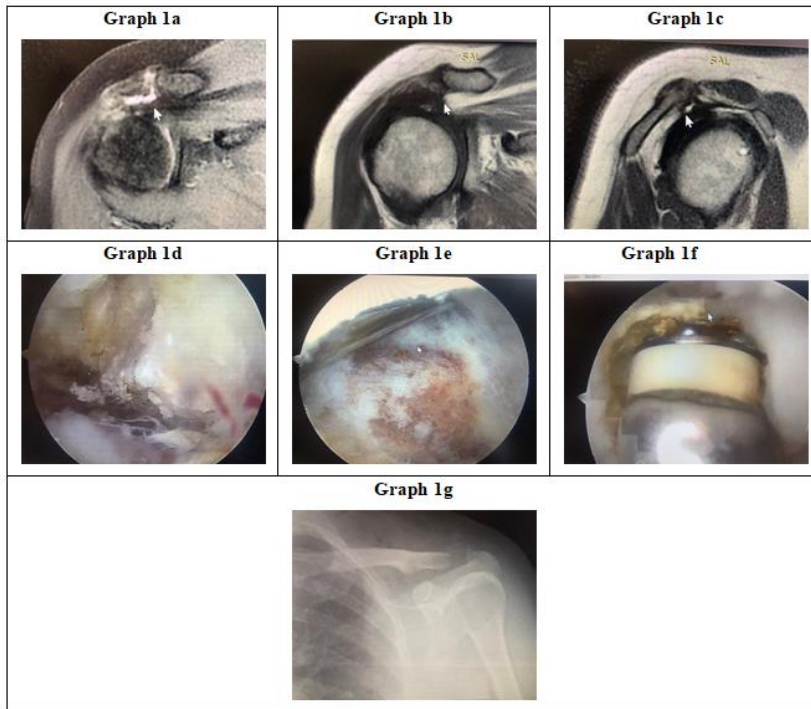
This study aimed to determine the frequency, according to patient age group, of additional pathologies detected during arthroscopic CDER for AC joint degeneration; and to raise awareness for simultaneous treatment of joint degeneration and additional pathologies, where present.

2. Patients and method

This study retrospectively evaluated the arthroscopy video records of 246 patients treated with arthroscopic CDER between February 2014 and February 2020 for whom the transaction code in the hospital information system was recorded. The study included 181 patients who had at least one positive test for symptomatic AC joint degeneration and showed additional pathologies during arthroscopy. Shubin stein classification was used in AC joint degeneration (7). All AC joint degenerations in the study were stage 3 and 4.

Patients who underwent only CDER and were not positive for at least one of the symptomatic AC joint degeneration tests (O'Brien's test, cross-body adduction test, AC joint pain) were excluded from the study. Arthroscopy was performed by the same surgeon, and additional pathologies were documented by examining video recordings. Three main patient age groups were formed: the first group group included patients aged 25-45 (young), the second group patients aged 45-65 (middle age) and the third group over 65 (advanced age). SLAP 2-3 lesions, supraspinatus damage, Type-2, 3 acromion and glenohumeral instability pathologies detected in arthroscopy video recordings were recorded in age groups.

Before shoulder arthroscopy, patients were radiologically evaluated with shoulder MRI (Graph 1a, 1b, 1c). Shoulder arthroscopy was then performed under general anesthesia with each patient in a semi-sitting position. Posterior portal imaging was used for lateral and anterior portal intervention. For image clarity, while blood pressure was kept under 100 mmHg, intraarticular pressure of 40-50 mm Hg was applied with an arthro pump. 3000 cc 0.9% sodium chlorine solution was used for intra-joint pressure and washing. First glenohumeral, and then subacromial joint arthroscopy was performed. Degeneration and inferior compression of the distal end of the clavicle was observed in the AC joint using the lateral and anterior portal in the subacromial joint (Graph 1d). The acromion due to inferior osteophyte was shaved with a burr. CDER was implemented to the extent to which bone burr was made to fit on the anterior portal. The posterior-upper AC joint ligament and capsule were preserved to maintain AC joint stability (Graph 1e). Since the AC joint is anatomically narrower towards the posterior, the CDER was enlarged 1-2 mm more posterior-upper to provide a symmetrical opening. Intra-articular pathologies were resolved in the same session. Primary repair or tenotomy was applied to the most frequently detected SLAP lesion (Graph 1f). The adequacy of CDER was determined by taking shoulder radiography the next day (Graph 1g).



3. Statistical Analysis

Frequency, mean, and standard deviation values were calculated by descriptive statistical methods. Numeric variables were assessed using the ANOVA test. Bonferroni was used as a post hoc test to determine the difference between groups. Dichotomous variables were assessed by crosstabs and Pearson's chi-square test. Pearson correlation coefficient was used to analyze whether significant correlation exists between the parameters. Two-tailed hypothesis was considered in the analyses, and the significant differences were accepted if p value was .05 or less. SPSS 18.0 software for Windows (SPSS, Inc., Chicago, IL, USA) was used in the evaluation of statistical analyses.

4. Findings

There were 181 cases who underwent CDER due to symptomatic AC joint degeneration and who had additional pathology. 98 of the cases were male and 83 of them were female. The mean follow-up time was 37.5 months (range: 3-87 months). Average age was 52.8 years (range: 25-76 years). The mean age was 55.9 in females and 49.1 in males, and there was no significant difference ($p = 0.002$). The rate of those using the right arm is 93.4%. Right

shoulder arthroscopy was performed in 87 patients (48.1%) and left shoulder arthroscopy was performed in 94 patients (51.9%).

Supraspinatus tear was detected in 60 patients; type 2-3 acromion in 80 patients; subscapularis tear in 13 patients; and GH instability (most commonly 144 SLAP lesions) in 20 patients. Other pathologies were detected in 1 in 75 patients, 2 in 80 patients, 3 in 22 patients, and 4 in 4 patients. The distribution of pathologies according to age group is shown in Table 1.

Table 1: Number of additional pathologies according to age groups.

		Number of concomitant intra-articular pathologies.				Total
		1	2	3	4	
Group	25-44	38	17	2	0	57
	45-64	28	42	10	0	80
	>65	9	21	10	4	44
Total		75	80	22	4	181

As patient age increased, the number of additional pathologies increased. A significant positive correlation was observed between the number of additional pathologies and age ($p = 0.000$, $r = 0.494$). There was also a significant positive correlation between supraspinatus tear and age ($p = 0.000$, $r = 0.628$).

Examination of additional pathologies by age group revealed a significant difference between the groups ($p = 0.005$). The number of additional pathologies in male patients in the 25-44 age group was significantly higher than in the other groups; the difference was ($p = 0.02$) with the 45-64 group and ($p = 00.01$) with the group over-65 group. SLAP lesion was the most common pathology seen. There was no significant difference between the groups ($p = 0.066$). Supraspinatus tear increased with increasing age. There was a significant difference between the groups ($p = 0.000$). The incidence of type 2, 3 acromion varied according to age groups. It was most commonly seen in the 45-64 group, and there was a significant difference with the 25-44 group ($p = 0.004$) and the over-65 group ($p = 0.022$). In terms of GH instability, a significant difference was observed in the 25-44 group compared to the other groups ($p = 0.006$). Subscapularis damage did not differ significantly between groups. The incidence of additional pathologies according to age groups and their statistical evaluation are shown in Table 2.

Table 2: Frequency of additional pathologies according to age groups and gender and statistical evaluation between groups

Group	Female/ Male	SLAP	Supraspinatus Tear	Type 2-3 Acromion	Subscapularis Tear	GH instability
25-44	21/36	40	1	18	8	11
45-64	48/32	65	25	47	3	2
>65	29/15	39	34	15	2	7
Total	98/83	144	60	80	13	20
ANOVA (P=)	0.005	0.066	0.000	0.002	0.053	0.004

5. Discussion

The 317 additional pathologies we detected in 181 patients who underwent arthroscopic CDER due to symptomatic AC joint degeneration showed that one should not focus on one pathology. SLAP and acromion compression were the most common in the 25-44 age group. They were also common in the 45-65 age group. SLAP and supraspinatus damage were common in the age group over 65 years. Since additional pathologies are mostly seen in the 44-65 age group, the diagnostic arthroscopy time initially applied during shoulder arthroscopy was kept longer in this age group.

AC joint degeneration causes pain in different parts of the shoulder. The accuracy of tests detecting AC joint degeneration are limited and specific diagnostic difficulties arise (8). Since different shoulder pathologies result in similar findings, using the most advanced imaging methods for detailed clinical examination is insufficient for a definitive diagnosis in the presence of multiple pathologies (9). Among the specific tests for AC joint degeneration, the body cross test can provide 77% sensitivity and the O-Brein test can provide 95% specificity (9,10). The local injection test is nearly 100% effective in the diagnosis of AC joint degeneration (11) and is the gold standard for diagnosing impingement syndrome due to AC joint degeneration, but it does not rule out the presence of additional pathology (12). Injection of the AC joint with USG increases the accuracy of the test (13). If there is edema at the distal end of the clavicle in MRI, AC joint degeneration is often symptomatic, and the pain finding is more pronounced (14). Arthroscopic diagnosis becomes valuable when 82% of the cases with AC joint degeneration are asymptomatic in MRI and the specific tests of the AC joint are not highly correlated with MRI (15). In cases undergoing CDER with open surgery, it has been recommended the resection be placed below 0.5 mm in order to prevent instability due to deltoid fascia, superior AC

ligament and capsule damage (16). In arthroscopic AC joint resection, stability is not impaired because the posterior-superior AC ligament and capsule are preserved, resulting in less pain and improved functional results (17). A cadaver study of the relative degeneration of different parts of the AC joint found joint degeneration to be more severe inferior and anterior to the joint. Osteophytes in the inferior region that develop due to degeneration cause tears by compressing the supraspinatus (18). In alignment with the literature our study prevented instability by preserving the posterior-superior ligament and capsule through arthroscopic CDER.

In the study investigating the pathologies accompanying AC joint degeneration, 42% SLAP and 65% supraspinatus damage in patients under 50 years of age, and 29% SLAP and 86% supraspinatus damage were reported in patients over 50 years of age. The rate of additional pathology seen in symptomatic AC joint degeneration has been reported as 97.7% (19). In our study, similar to those studies found in the literature, SLAP lesion rate decreased and supraspinatus tear rate increased with increasing age. The reason for the proportional decrease in SLAP lesions with increasing age was that the incidence of intra-articular pathologies increased with age.

In a study investigating intra-articular pathologies accompanying SLAP lesion, AC joint degeneration was observed in only 11% of patients, and supraspinatus tear was reported as the most common pathology in SLAP lesion in 40% of patients (20). In our study, since the SLAP lesion was the most common additional deformity, it was thought that impingement due to AC joint deformation was an important factor in the development of SLAP lesions.

In the study group of patients with a mean age of 37 who underwent arthroscopic CDER, the persistence of shoulder pain and functional limitation was reevaluated, and it was found that the source of pain was undetected SLAP lesion. In the etiology of both AC joint degeneration and SLAP lesions, specific trauma, repetitive micro trauma and frequent repetitions of overhead activities are prevalent (21).

Among the causes of shoulder pain that lasted longer than 6 months in cases with arthroscopic CDER, 9.9% of other shoulder pathologies were observed (22). In cases where arthroscopic supraspinatus repair was performed and shoulder pain persisted, it was reported that the source of pain was AC joint degeneration (23). In our study, supraspinatus tear was observed at a rate of 33.1%. This ratio increased with increasing age.

It has been reported that in cases where arthroscopic supraspinatus repair and CDER were performed, the application of CDER does not contribute to pain and functional recovery in the early period, and significantly contributes to them in the medium term (2 years) (24). In frozen shoulder cases with

multiple intra-articular pathologies, AC joint degeneration and other additional pathologies did not affect the functional results (including pain) of arthroscopic capsular release (25).

6. Conclusion

In patients who underwent arthroscopic CDER due to symptomatic AC joint degeneration, 317 additional pathologies were detected. SLAP lesion was most common in the 25-45 age group; SLAP and acromion compression most common in the 44-65 age group; and SLAP and supraspinatus damage most common in the over-65 age group. Diagnostic arthroscopy time was kept long in patients scheduled for CDER due to AC joint degeneration. Additional pathologies detected during arthroscopic CDER were treated in the same session. It was noted that untreated additional pathologies were prevalent in the setting of continued shoulder pain.

7. References

- [1] Murphy RJ, Carr AJ. Shoulder pain. *BMJ Clin Evid* 2010 Jul; 22: 1107. PMID: 21418673
- [2] Nuber GW. Arthroscopic treatment of acromioclavicular joint injuries and results 2003 Apr; 22(2): 301-17. [http://doi.org/10.1016/S0278-5919\(03\)00014-0](http://doi.org/10.1016/S0278-5919(03)00014-0)
- [3] Bulkmans K, Peeter L, Wilde LD et al. The relationship of the acromion to the distal clavicle in normal and symptomatic degenerated acromioclavicular joints. *Arch Orthop Trauma Surg* 2020 Apr; 140(4): 465-72. <http://doi:10.1007/s00402-019-03258-9>. Epub 2019 Aug 19.
- [4] Needell SD, Zlatkin MB, Sher JS et al. MR imaging of the rotator cuff: peritendinous and bone abnormalities in an asymptomatic population. *AJR Am J Roentgenol* 1996; 166: 863-7.
- [5] Docimo S Jr, Kornitsky D, Futterman B et al. Surgical treatment for acromioclavicular joint osteoarthritis: patient selection, surgical options, complications, and outcome. *Curr Rev Musculoskelet Med* 2008; 1: 154-60.
- [6] Lenz R, Kreuz PC, Tischer T. Arthroscopic resection of the acromioclavicular joint. *Oper Orthop Traumatol* 2014 Jun; 26(3): 245-53. <http://doi:10.1007/s00064-013-0279-7>. PMID: 24924505
- [7] Stein BEL, Wiater JM, Pfaff HC et al. Detection of acromioclavicular joint pathology in asymptomatic shoulders with magnetic resonance imaging. *J Shoulder Elbow Surg* 2001 May-Jun; 10(3): 204-8.

- [8] Mazzocca AD, Arciero RA, Bicos J. Evaluation and treatment of acromioclavicular joint injuries. *Am J Sports Med* 2007; 35: 316-29.
- [9] Chronopoulos E, Kim TK, Park HB et al. Diagnostic value of physical tests for isolated chronic acromioclavicular lesions. *Am J Sports Med* 2004; 32: 655-61.
- [10] Mall NA, Foley E, Chalmers PN et al. Degenerative joint disease of the acromioclavicular joint: a review. *Am J Sports Med* 2013; 41: 2684-92.
- [11] Ulaşlı AM, Erkeç S, Uyar S et al. The effect of acromioclavicular joint degeneration on orthopedic shoulder tests. *Eklem Hastalik Cerrahisi* 2013; 24: 77-81.
- [12] Walton J, Mahajan S, Paxinos A et al. Diagnostic values of tests for acromioclavicular joint pain. *J Bone Joint Surg [Am]* 200 4; 86: 807-12.
- [13] Ketola S, Lehtinen J, Rousi T et al. Which patients do not recover from shoulder impingement syndrome, either with operative treatment or with nonoperative treatment? *Acta Orthop* 2015; 86: 641-6.
- [14] Bomfim LS, Ejnisman B, Belangero PS. Histologic and magnetic resonance image evaluation acromioclavicular joint osteoarthritis. *JSES international* 2020 Jun 1; 4(3): 536-41. [http://doi: 10.1016/j.jseint.2010.03.007](http://doi:10.1016/j.jseint.2010.03.007).
- [15] Stein BE, Wiater JM, Pfaff HC et al. Detection of acromioclavicular joint pathology in asymptomatic shoulders with magnetic resonance imaging. *Joint Shoulder Elbow Surgery* 2001; 10: 204-8.
- [16] Gökkuş K, Saylık M, Atmaca H et al. Limited distal clavicle excision of acromioclavicular joint osteoarthritis. *Orthop Traumatol Surg Res.* 2016 May; 102(3): 311-8. [http://doi: 10.1016/j.otsr.2016.01.008](http://doi:10.1016/j.otsr.2016.01.008).
- [17] Amirtharaj MJ, Wang D, McGraw MH et al. Trends in the surgical management of acromioclavicular joint arthritis among board-eligible US orthopaedic surgeons. *Arthroscopy* 2018; 34: 1799-805.
- [18] Hatta T, Sano H, Zuo J et al. Localization of degenerative changes of the acromioclavicular joint: a cadaveric study. *Surg Radiol Anat* 2013 Mar; 35(2): 89-94. <http://doi:10.1007/s00276-012-1006-z>. Epub 2012 Aug 12.
- [19] Brown JN, Roberts SN, Hayes MG et al. Shoulder pathology associated with symptomatic acromioclavicular joint degeneration. *J Shoulder Elbow Surg* 2000; 9: 173-6.

- [20] Snyder ST. Shoulder arthroscopy. 2nd Ed, Lippincott Williams Q Wilkins, 2002
- [21] Berg EE, Ciullo JV. The SLAP lesion: a cause of failure after distal clavicle resection. *Arthroscopy* 1997; 13: 85-9.
- [22] Brix LD, Thilleman TM, Bjqrnhoidt KT et al. High prevalence of persistent pain 6 months after arthroscopic subacromial decompression and/or acromioclavicular joint resection. *SICOT J* 2019; 5: 21. <http://doi:10.1051/sicotj/2019021>. PMID: 31210126
- [23] Chalmers NC, Granger E, Ross H et al. Preoperative factors associated with subsequent distal clavicle resection after rotator cuff repair. *Orthop J Sports Med* 2019 May 2; 7(5): 231. <http://doi:10.1177/2325967119844295>.
- [24] Kim J, Chung J, Ok H. Asymptomatic acromioclavicular joint arthritis in arthroscopic rotator cuff tendon repair: a prospective randomized comparison study. *Arch Orthop Trauma Surg* 2011 Mar; 131(3): 363-9. <http://doi:10.1007/s00402-010-1216-y>.
- [25] Yıldız F, Sarı A, Pulatkan A et al. Effect of nonoperative concomitant intraarticular pathologies on the outcome of arthroscopic capsular release for adhesive capsulitis of the shoulder. *AOTT* 2018; 52: 245-48. <http://doi:10.1016/j.aott.2018.04.002>.