



Kas Tümörleri

Prof Dr Taner Akalın
Ege ÜTF Patoloji AD

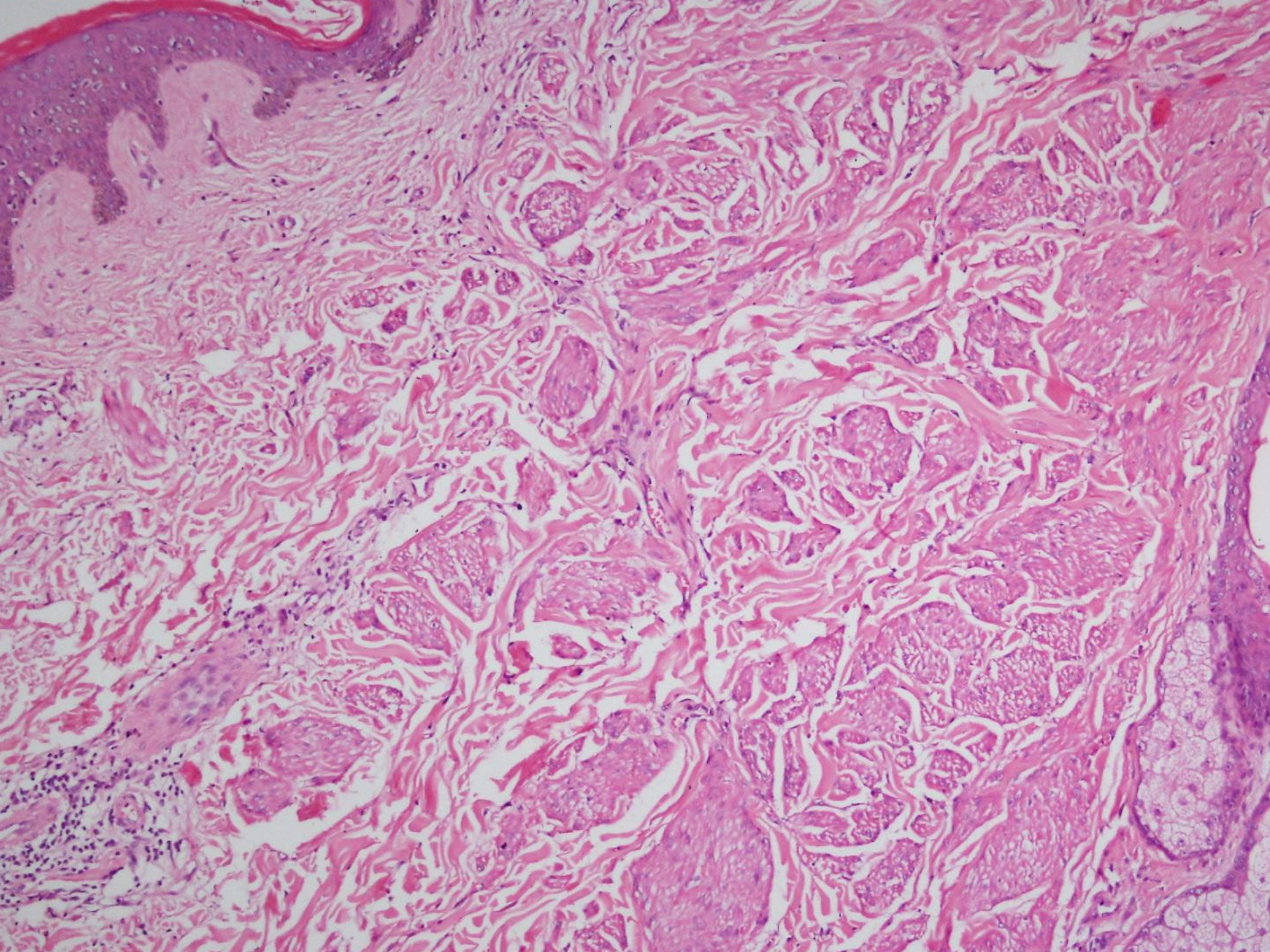
21. Ulusal Patoloji Kongresi, İzmir
Yumuşak doku tümörleri kursu

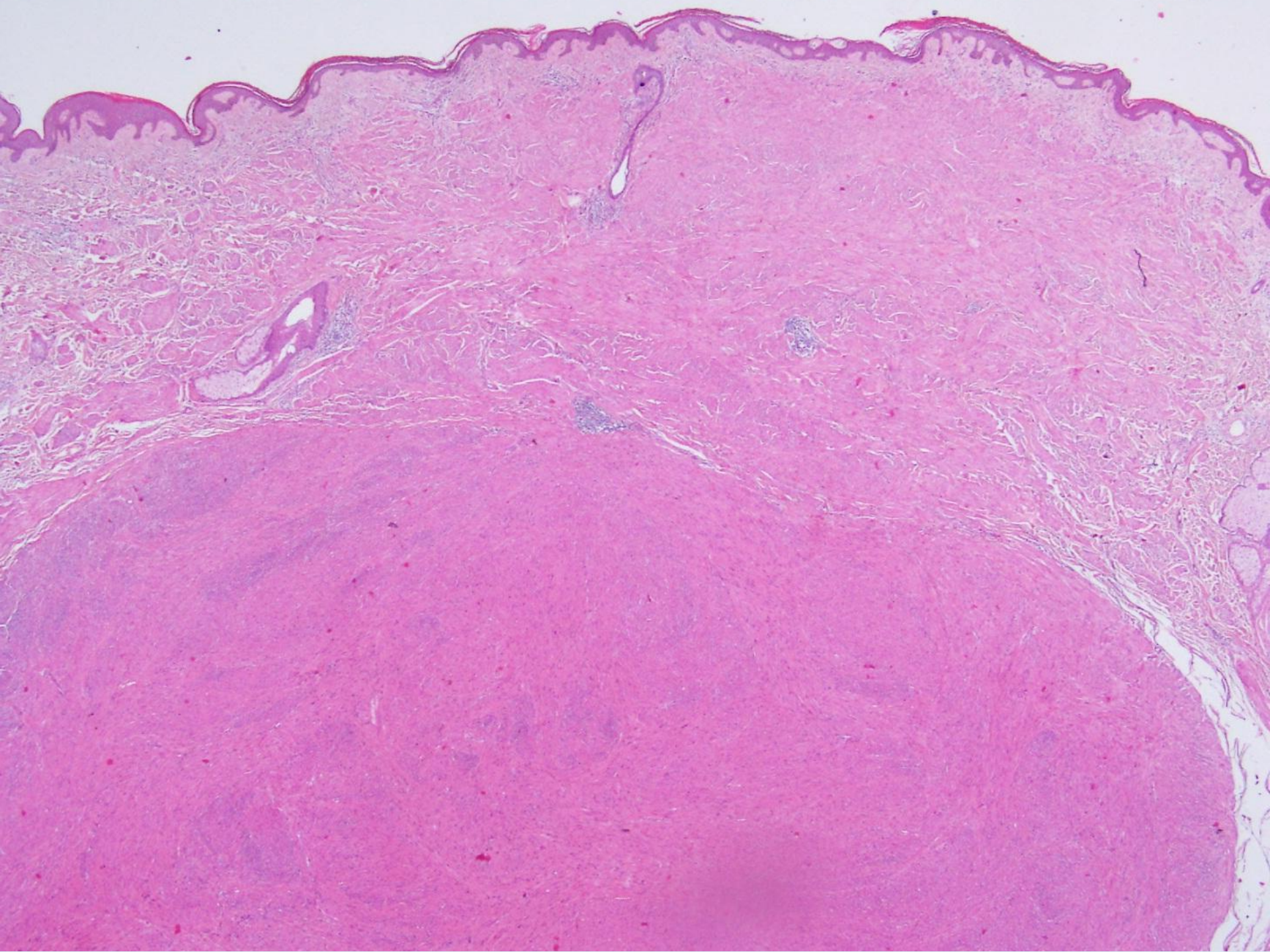
Düz Kas Tümörleri

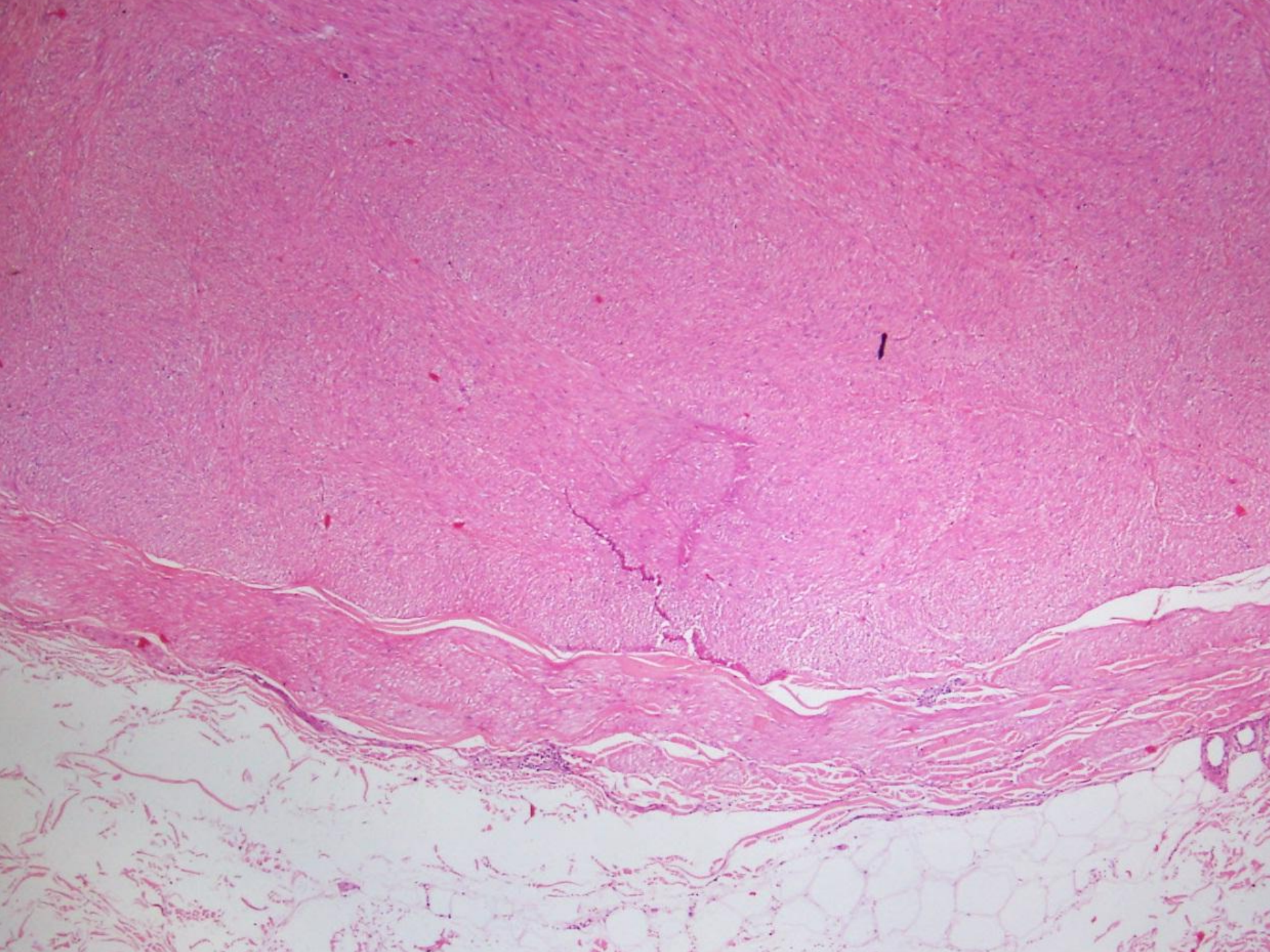
- **Leiyomyom**
 - * Pilar leiyomyom
 - * Anjiyomyom
 - * Derin yerleşimli leiyomyom
- **Leiyomyosarkom**
 - * Kutanöz LMS
 - * Derin yerleşimli LMS
 - * Retroperitoneal LMS
 - * Vasküler LMS
 - * EBV ilişkili LMS

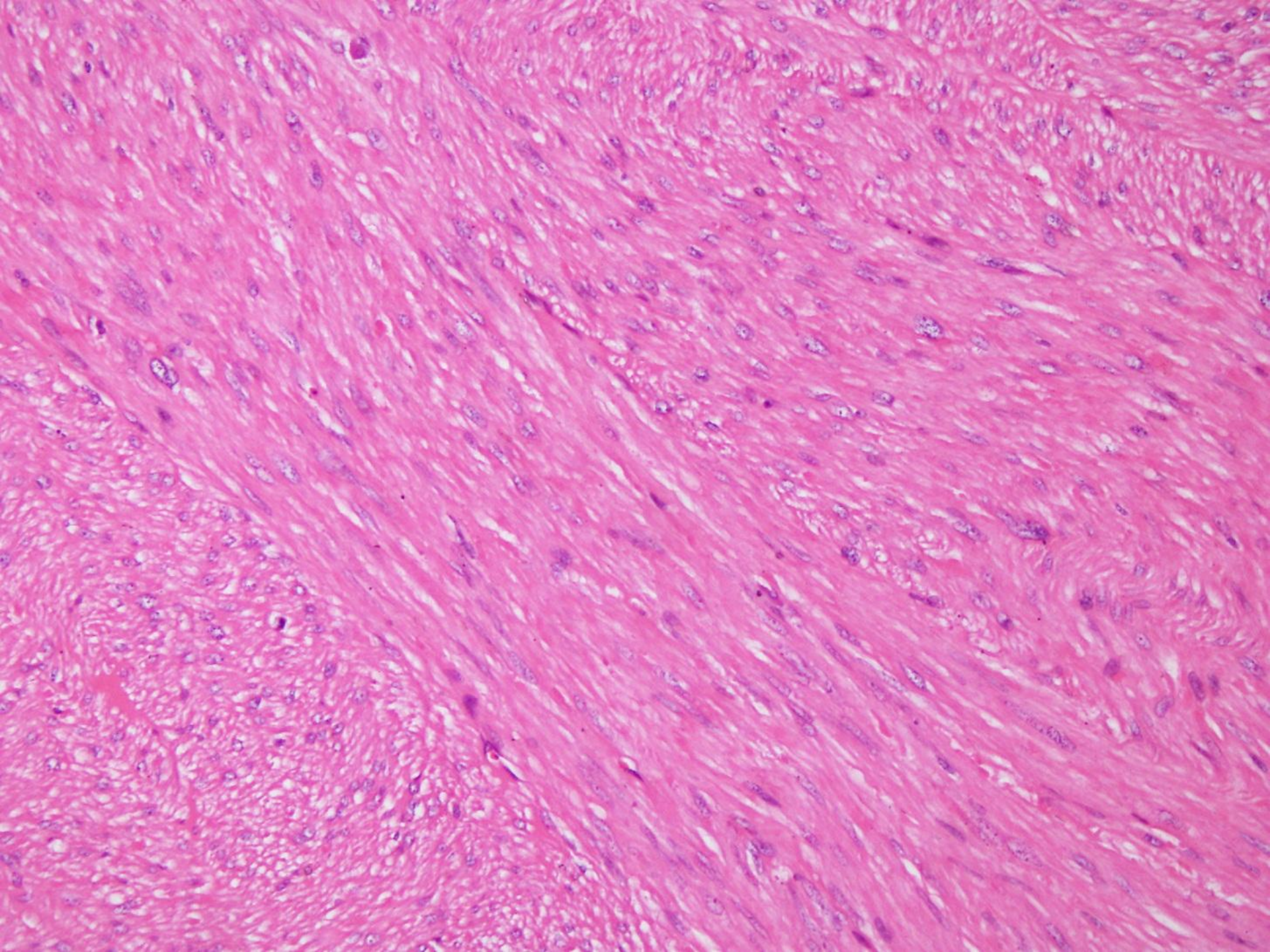
Pilar Leiyomyom

- Muskulus erektör pilarislerden kaynaklanır
- Dermal yerleşimli, kapsülsüz
- Genellikle 2 cm den küçük boyutlu
- Soliterdir ancak çok sayıda olabilir
- Genellikle ağrılıdır
- Seyrek dejeneratif atipik hücre olabilir ancak mitoz yok veya 1 tane



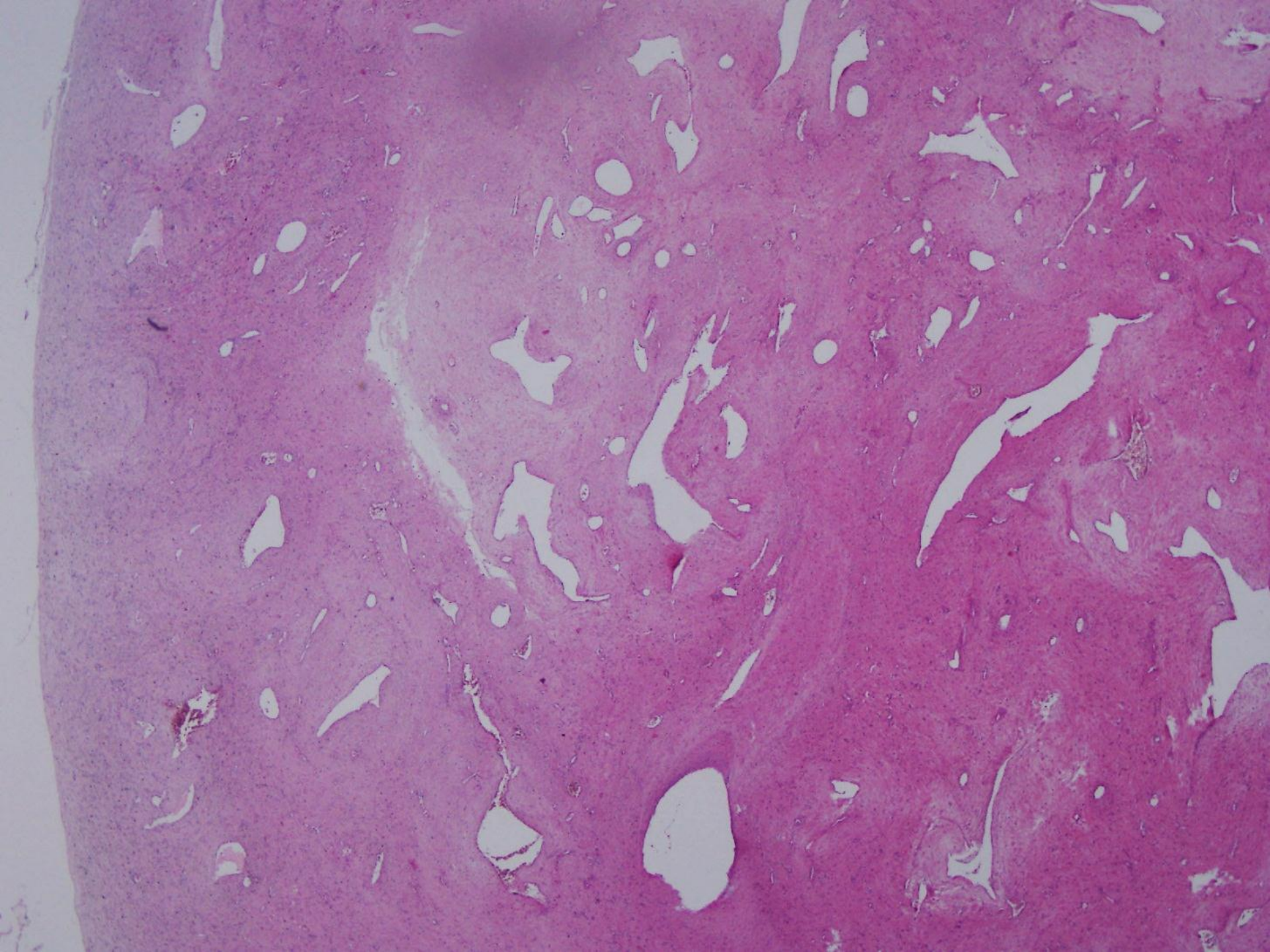


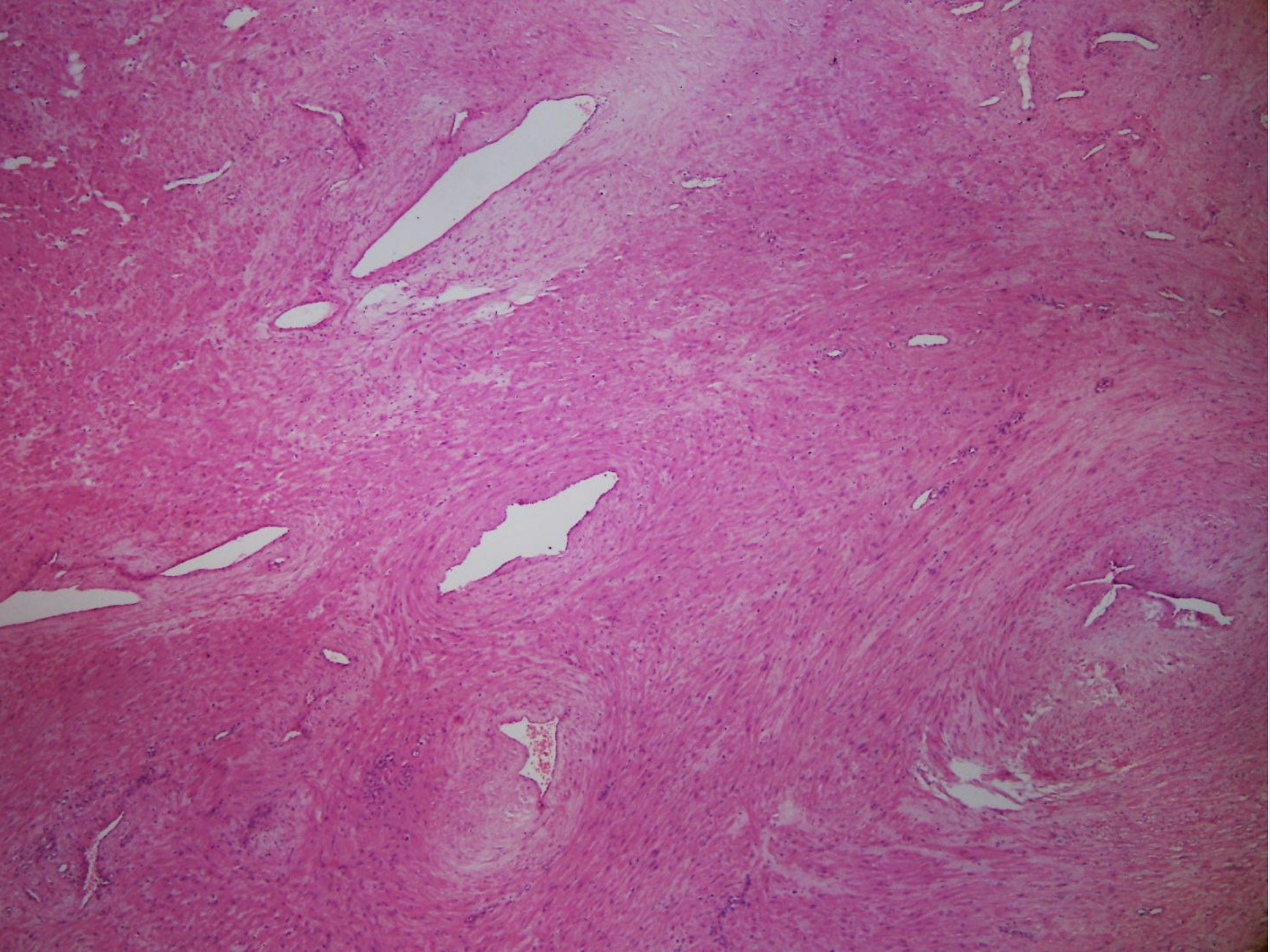


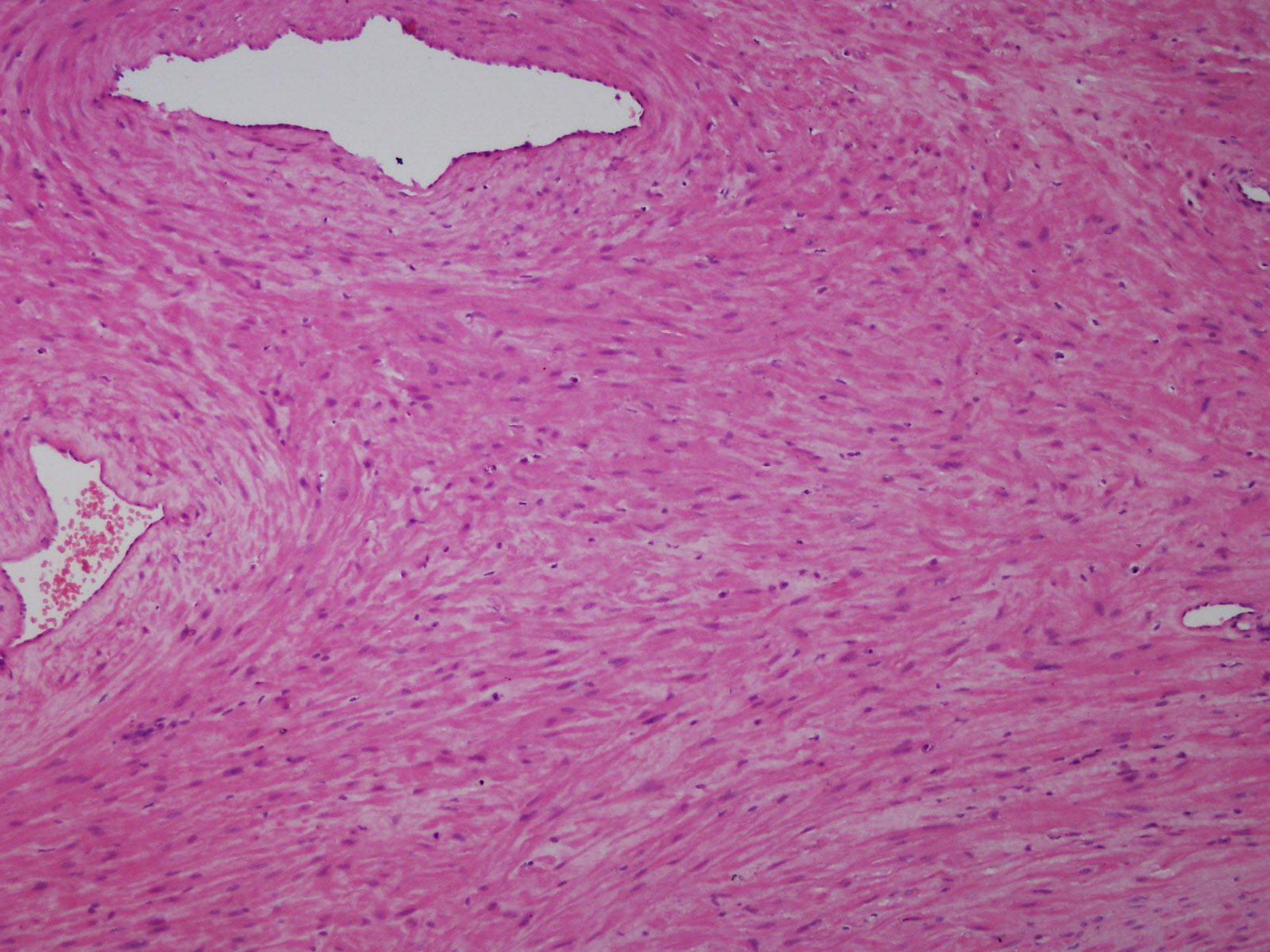


Anjiomyom

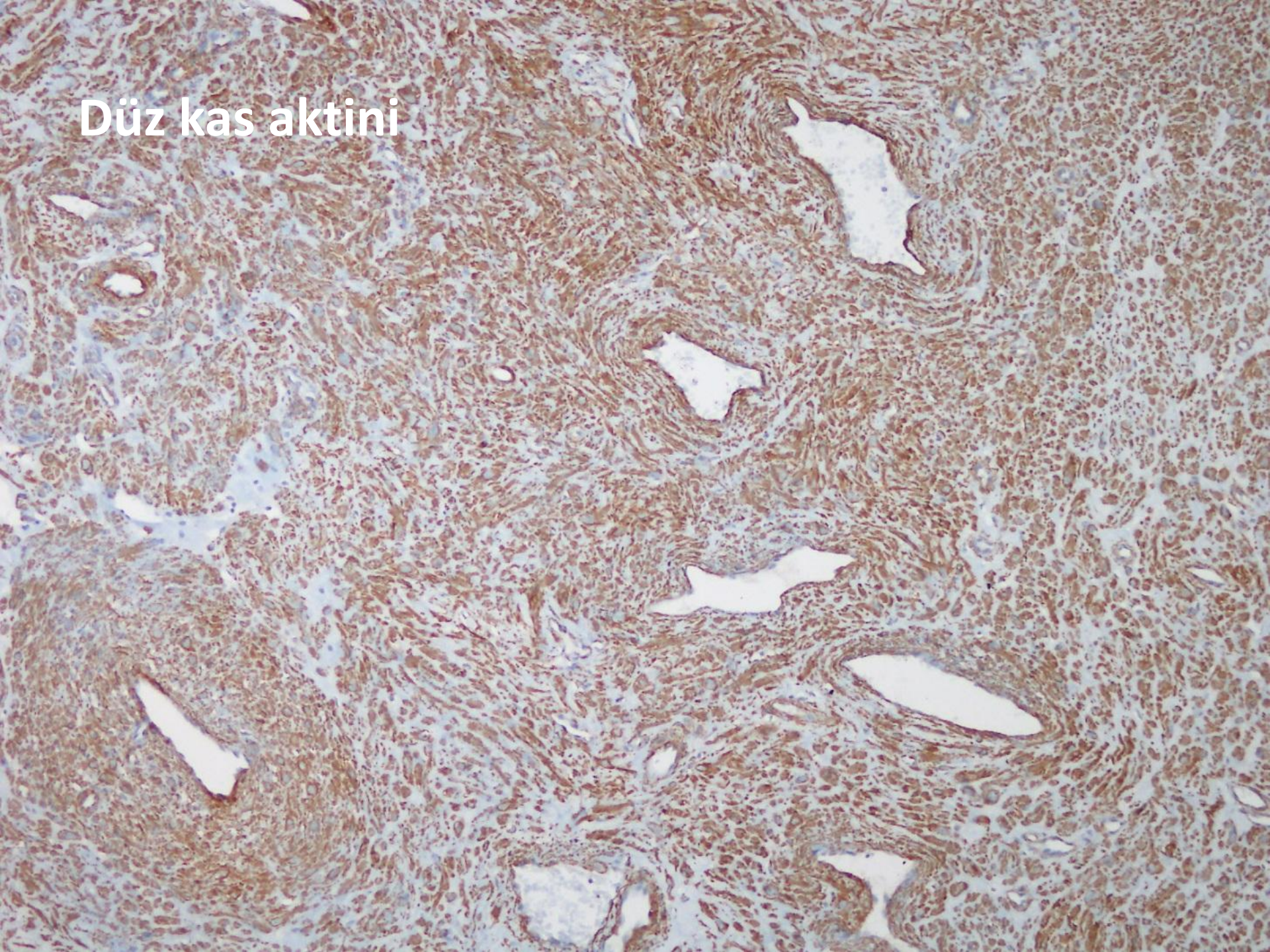
- Erişkinlerde, alt ekstremitelerde, subkutanöz
- Üç cm'den küçük, soliter, iyi sınırlı
- Tipik klinik bulgusu ağrı
- Dilate kalın duvarlı damar yapıları arasında matür görünümlü düz kas demetleri
- Separe dejeneratif hiperkromatik nukleuslu hücreler olabilir, mitoz yok veya çok seyrek
- Yağ dokusu alanları, vasküler tromboz, stromal hyalinizasyon, miksoid değişiklik, distrofik kalsifikasyon bulunabilir







Düz kas aktini

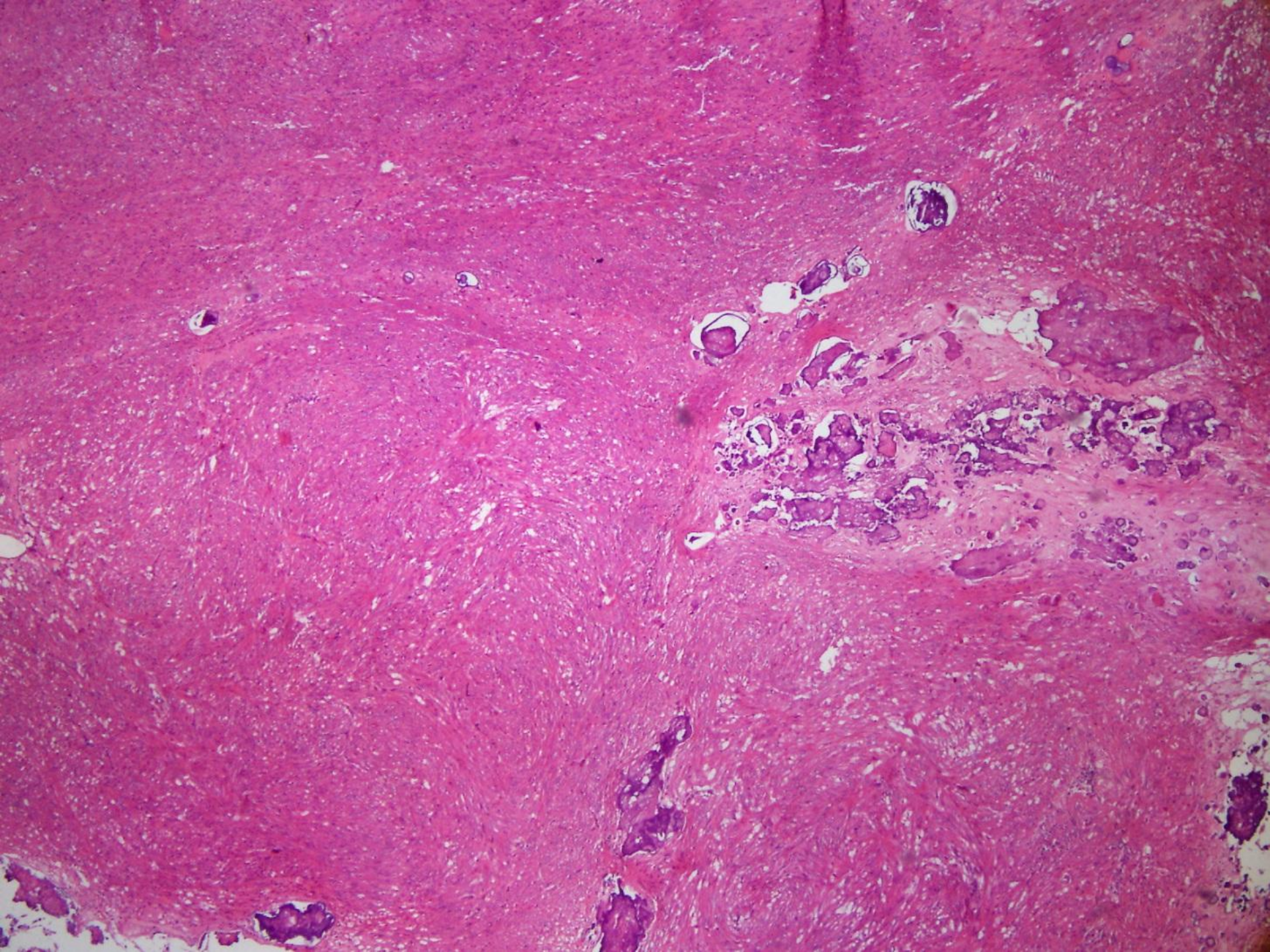


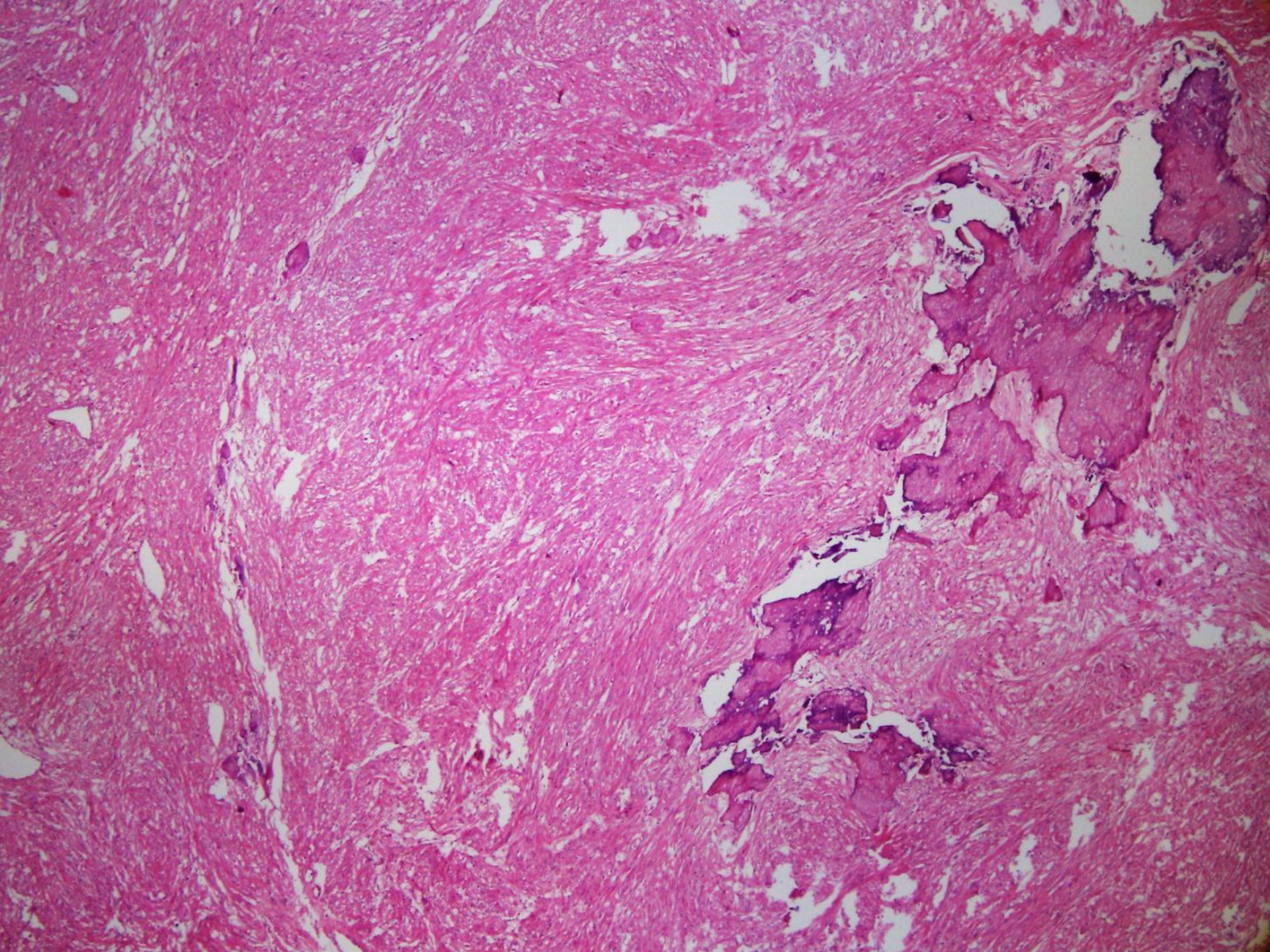
Derin yerleşimli leiomyom

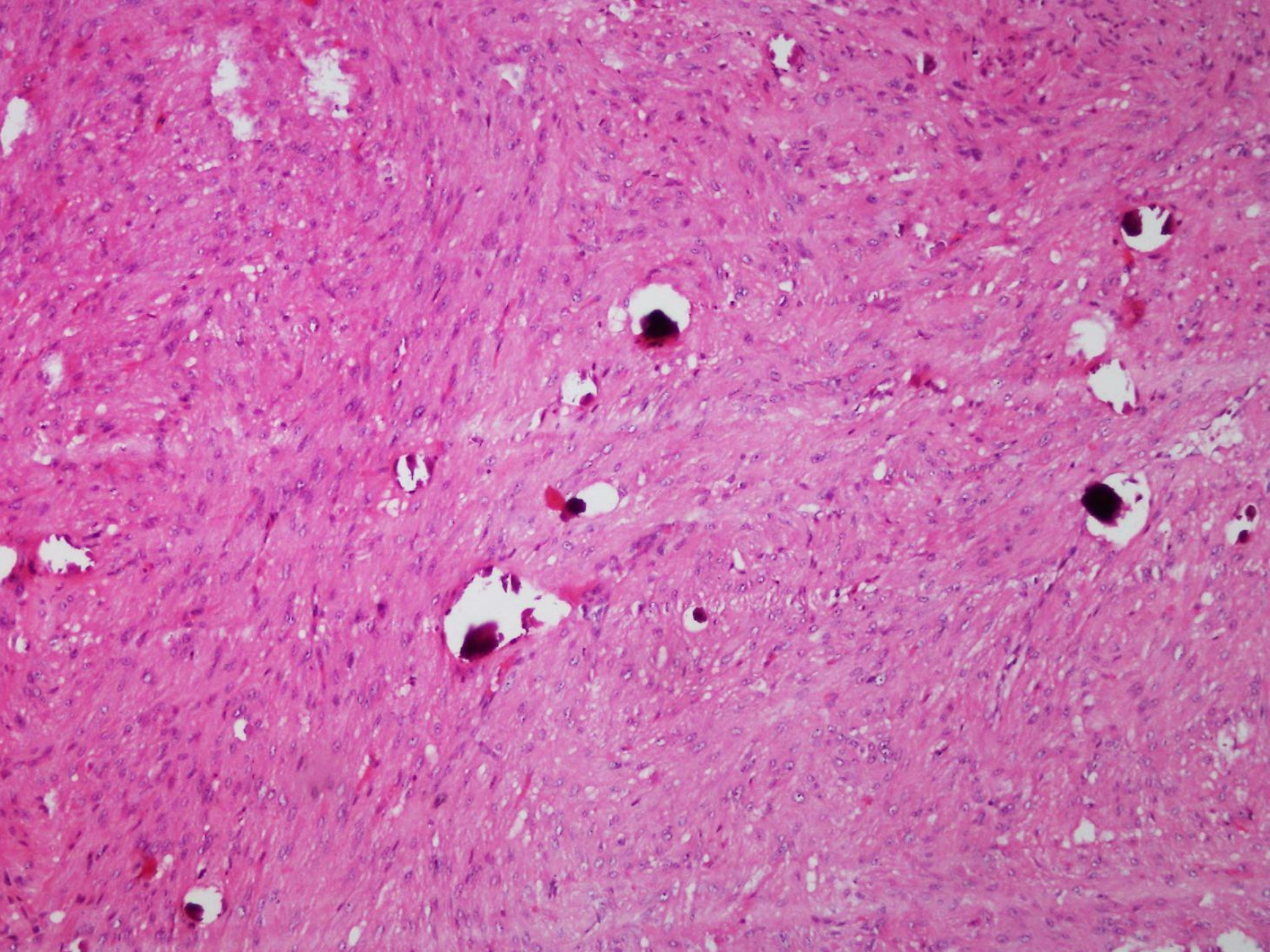
- Nadir
- Ekstremitelerde (en sık uyluk) ve retroperiton
- Retroperiton yerleşimli olguların büyük bölümü kadınlarda görülür ve hemen her zaman immunhistokimyasal yöntemle östrojen ve progesteron reseptörü pozitifdir

Ekstremitelerde yerleşimli derin leiomyom

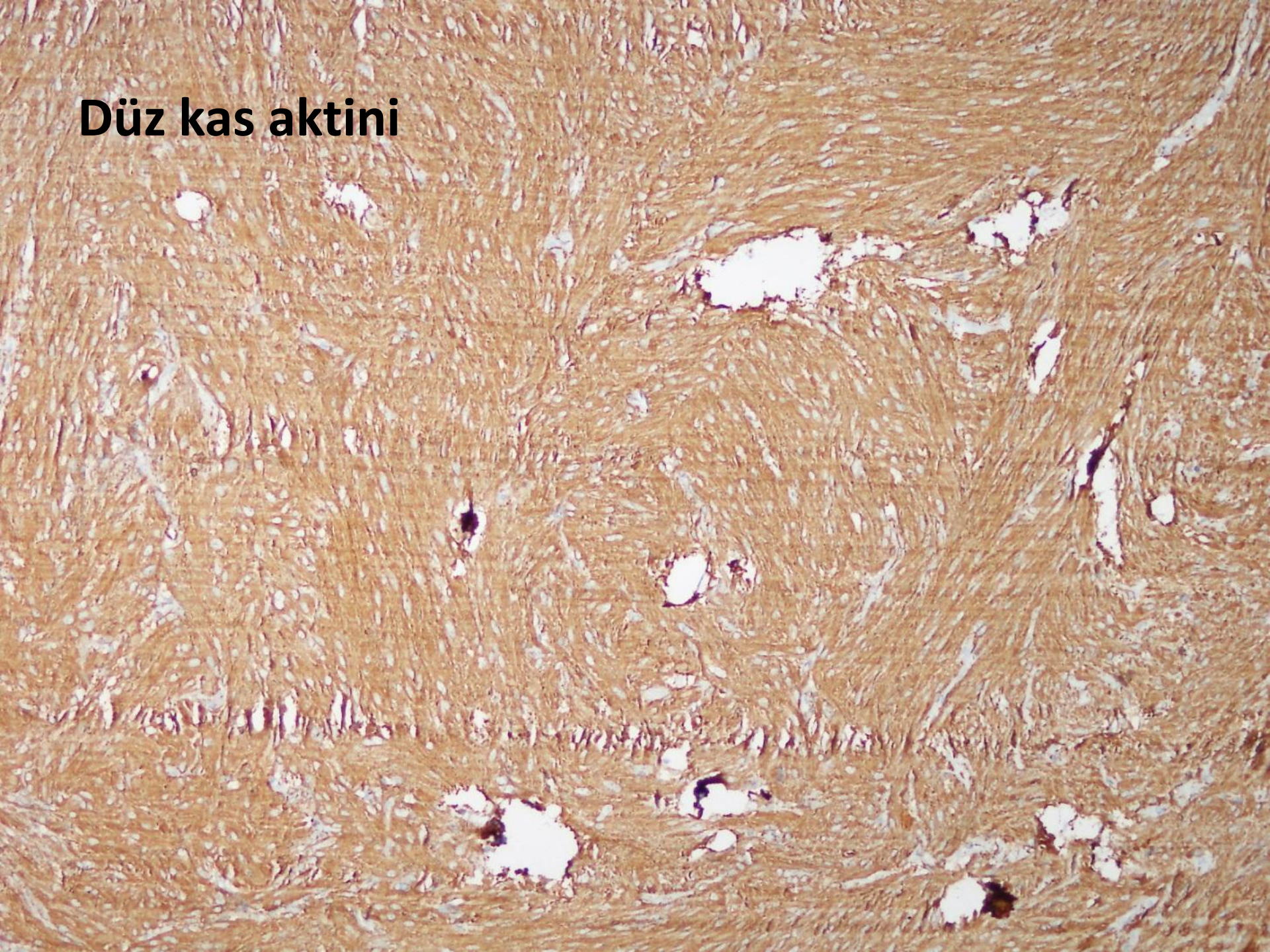
- Genel olarak sellüleritesi görece düşüktür
- Sıklıkla hyalinizasyon, fibrozis, miksoid değişiklik ve kalsifikasyon gibi dejeneratif değişiklikler bulunur.
- Nükleer atipi yok ve mitoz çok seyrek (50 BBA bir veya yok)





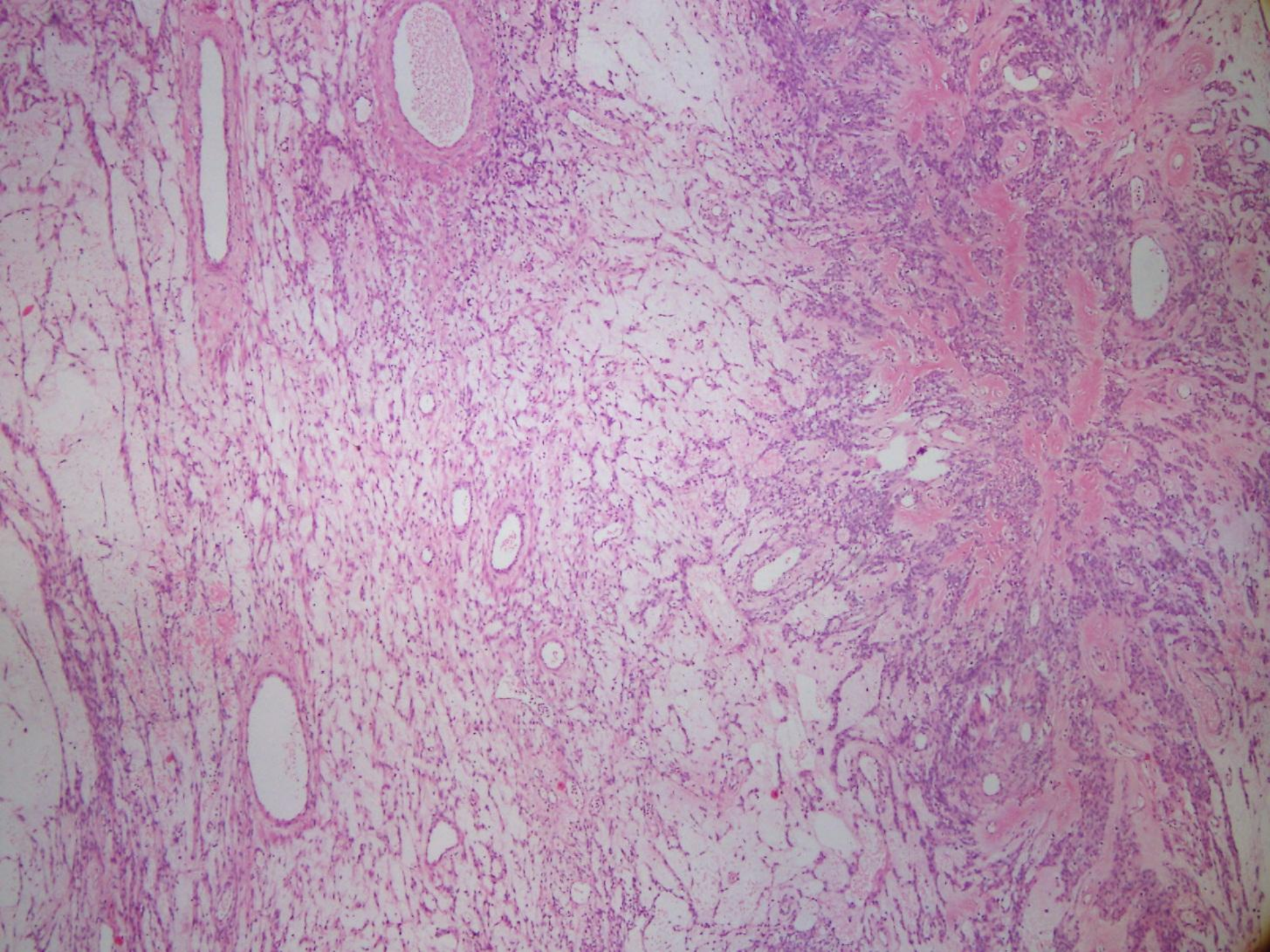


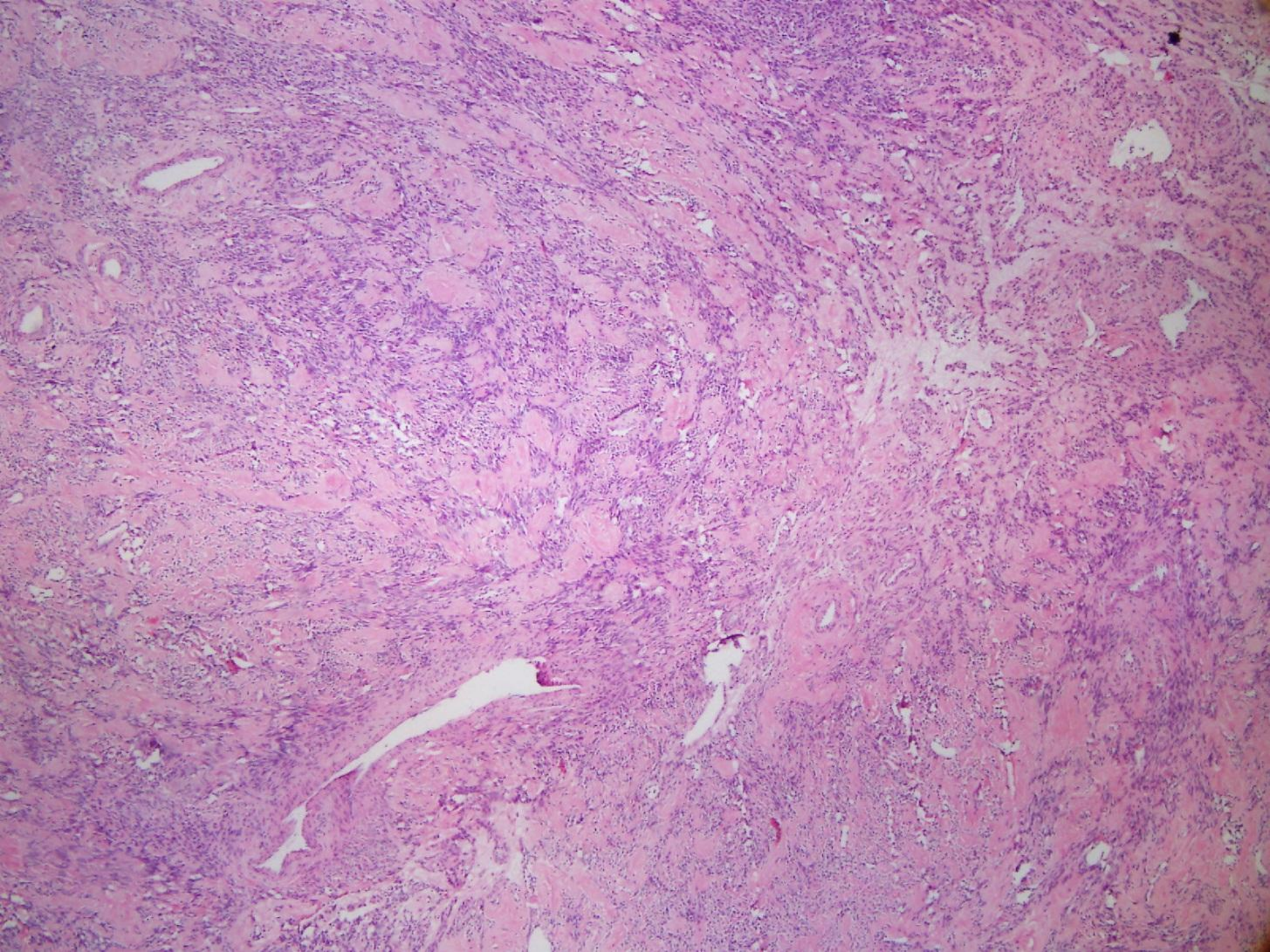
Düz kas aktini

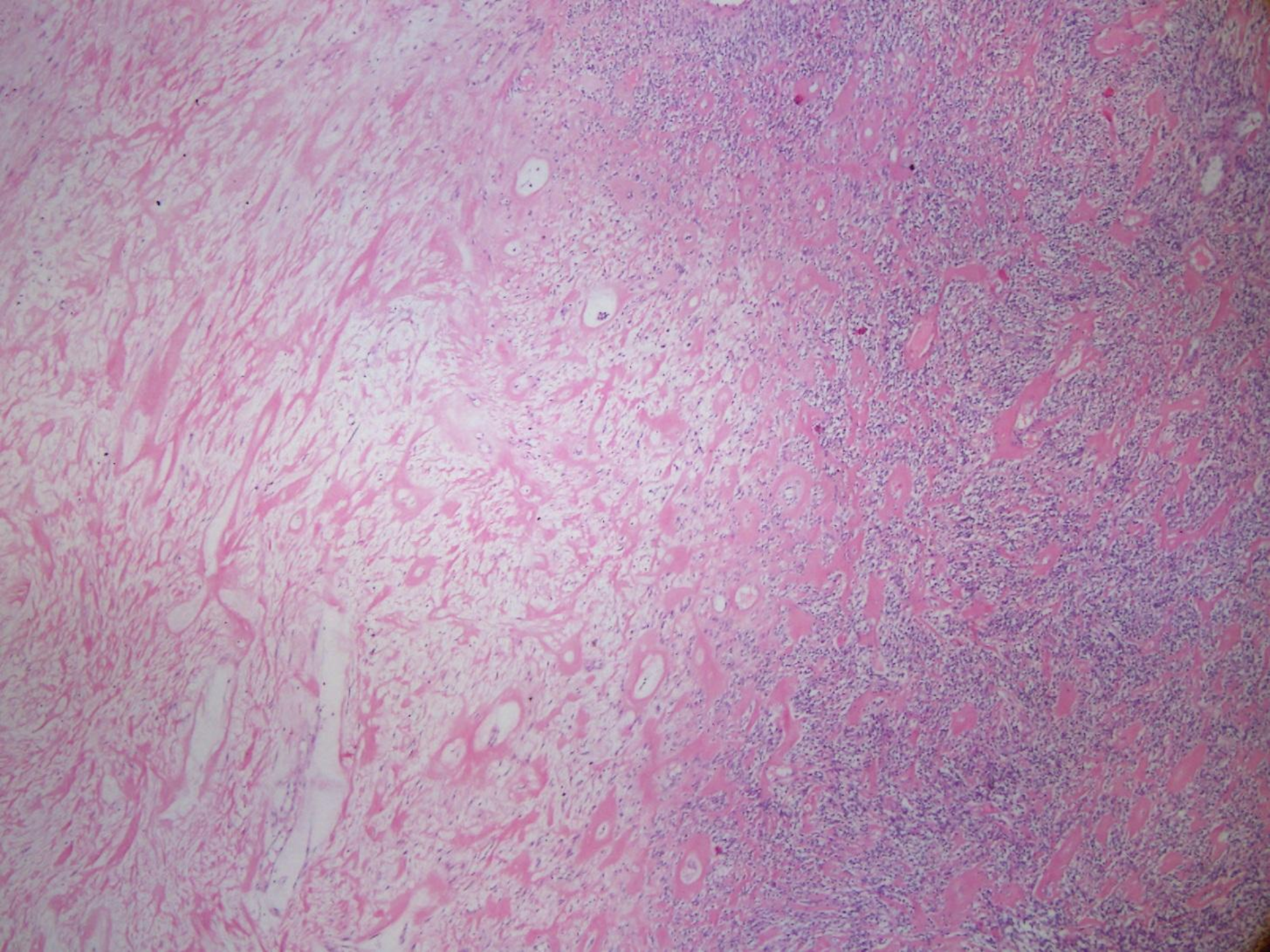


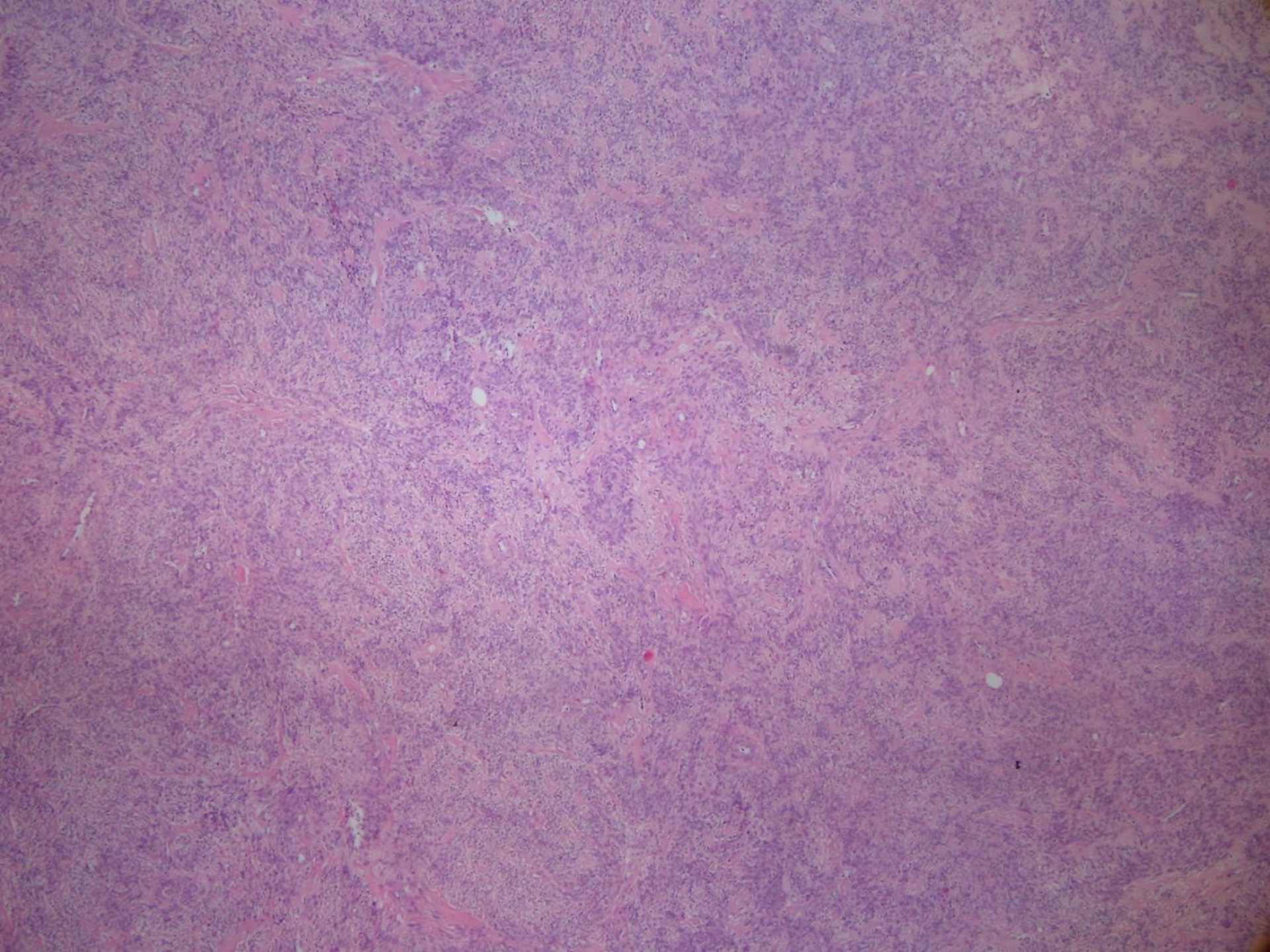
Retroperiton yerleşimli leiomyom

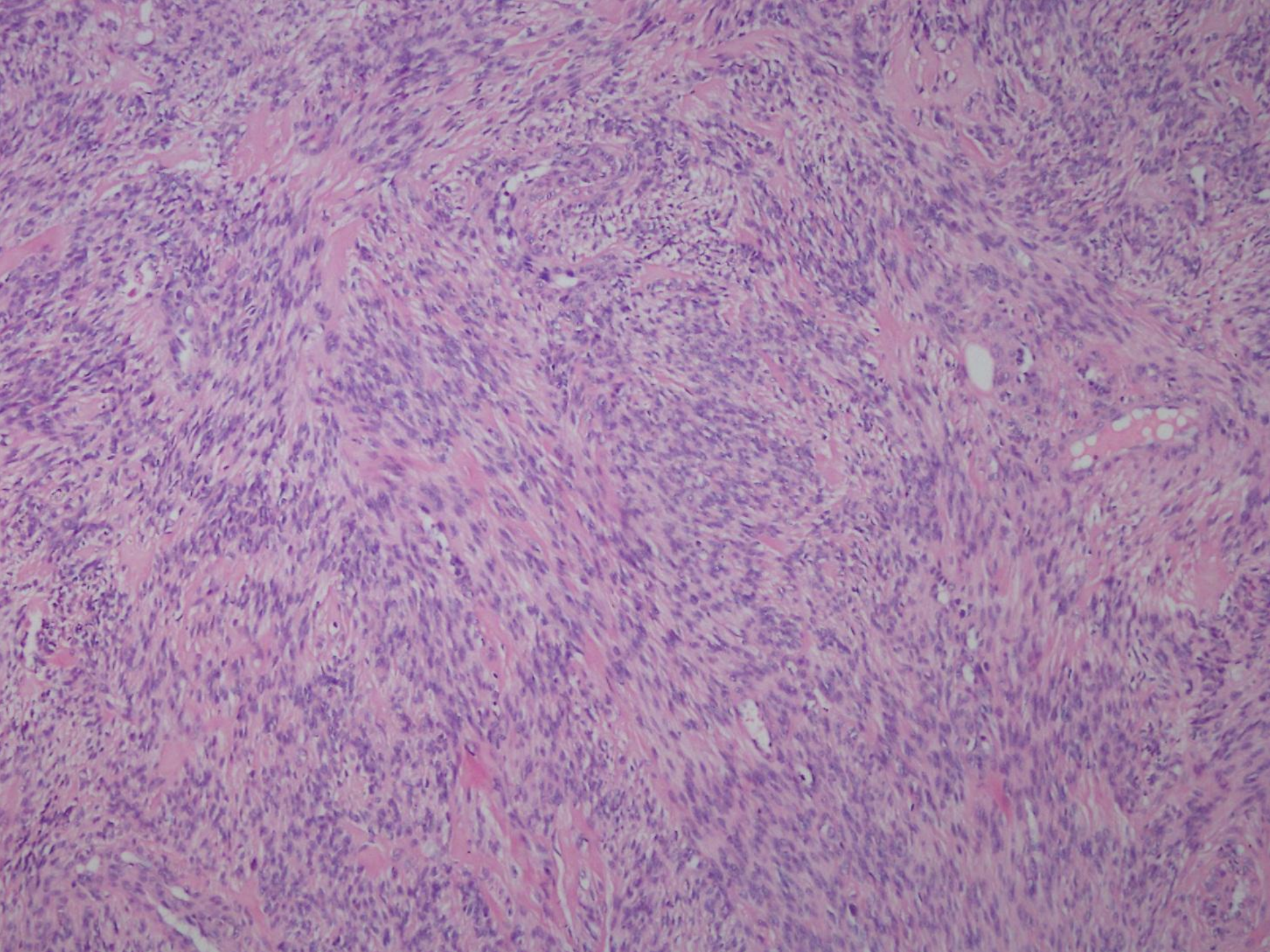
- Uterus leiomyomlarına benzer (yani ekstremiteler yerleşimli leiomyomlara göre daha hücresel ve epiteloid görünümlü hücreler olabilir)
- Nükleer atipi ve koagülasyon nekrozunun bulunmadığı olgularda 50 BBA'da 4 mitoz görülebilir
- Mitoz sayısı 5-10 olan olgular için yeterli veri yok = malignite potansiyeli belirsiz düz kas tümörü

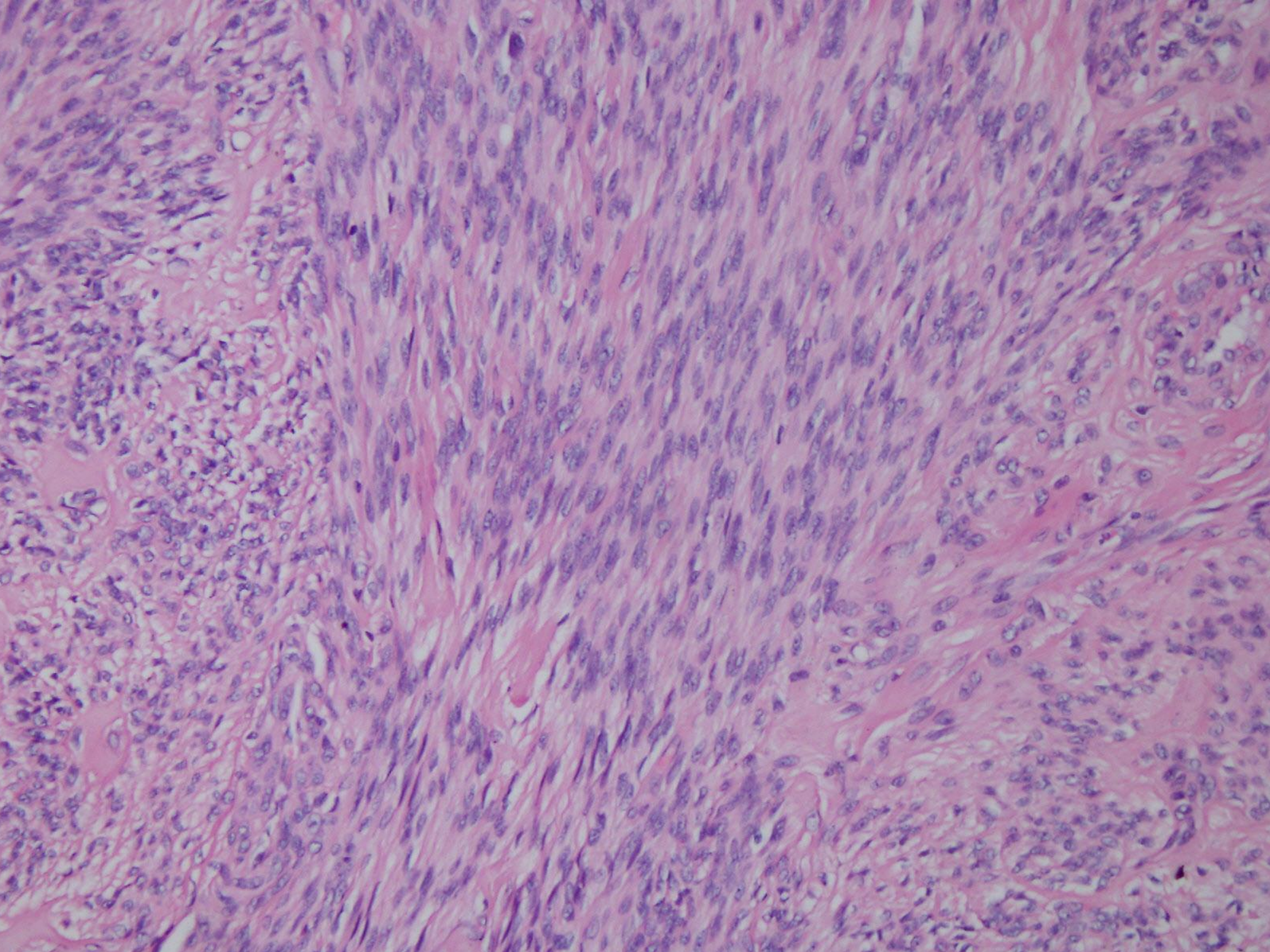




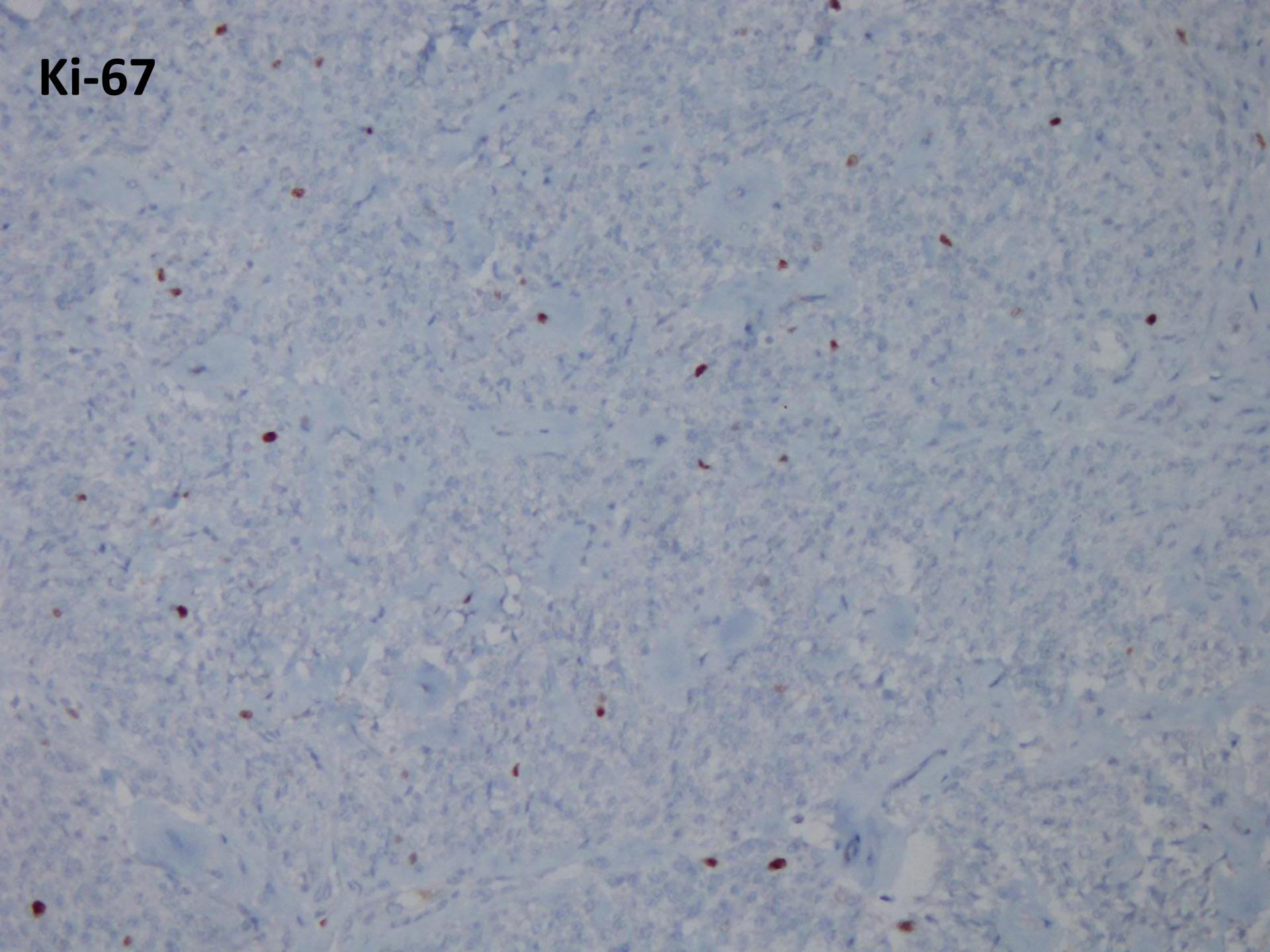




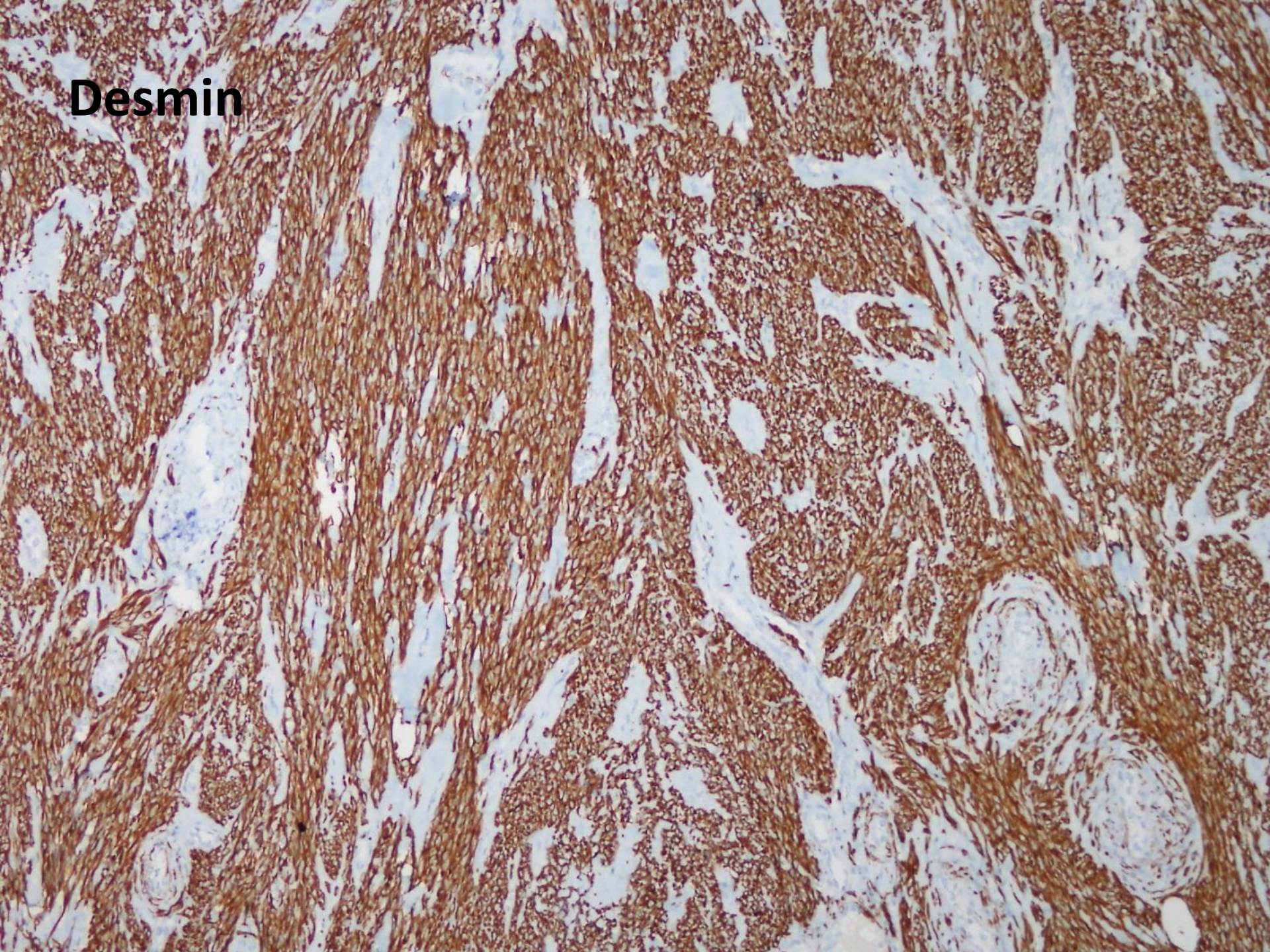




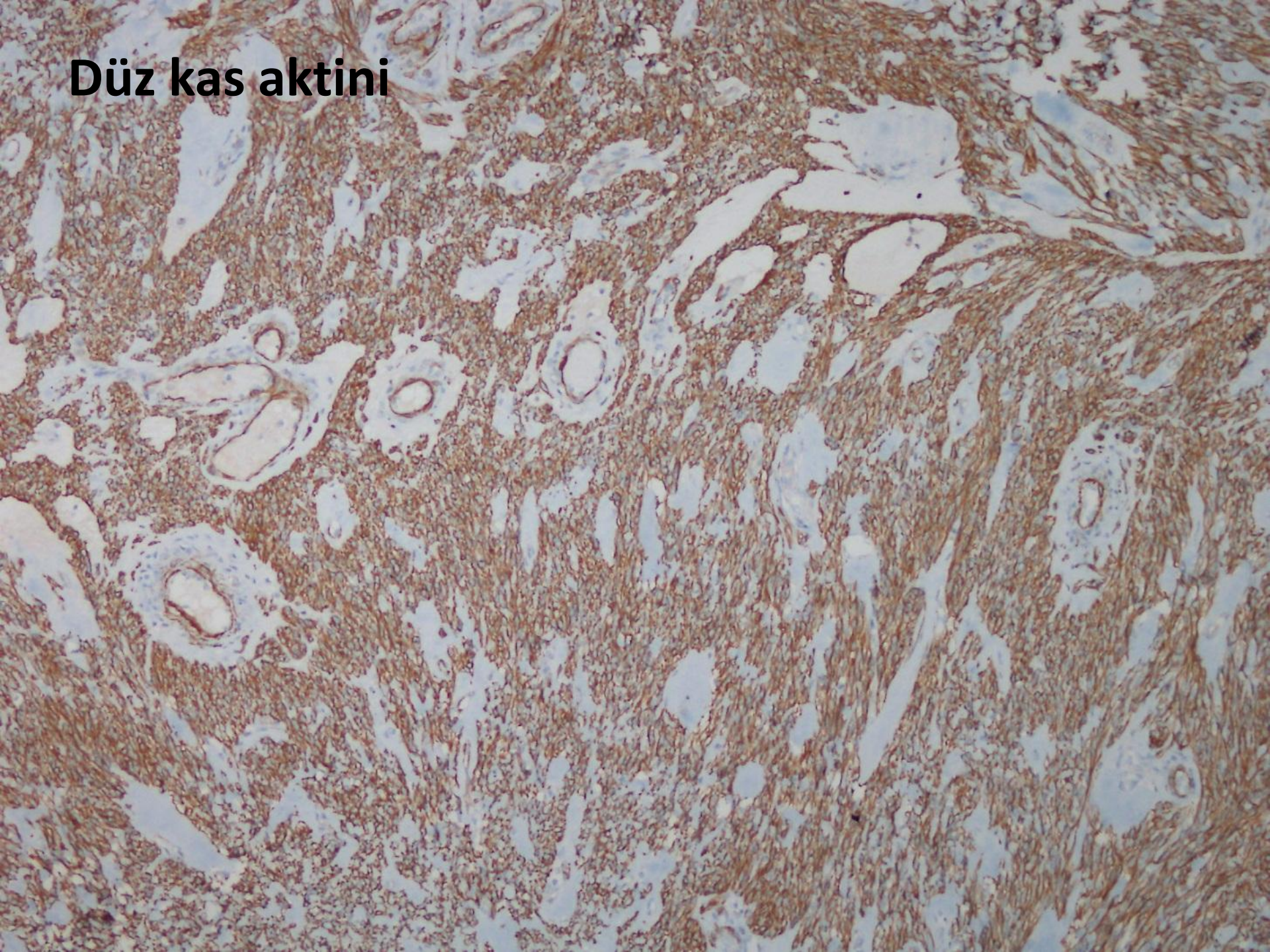
Ki-67



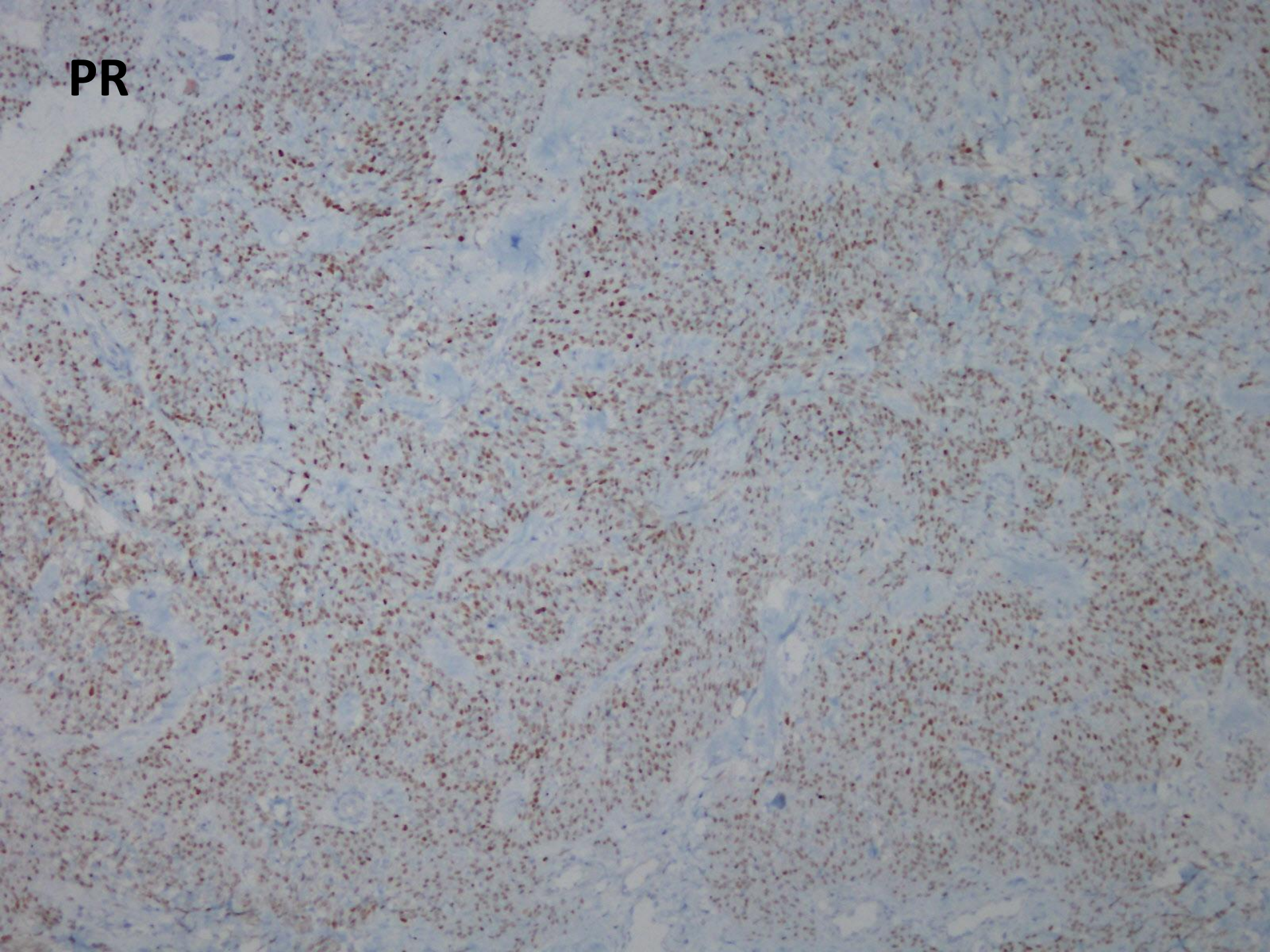
Desmin



Düz kas aktini



PR

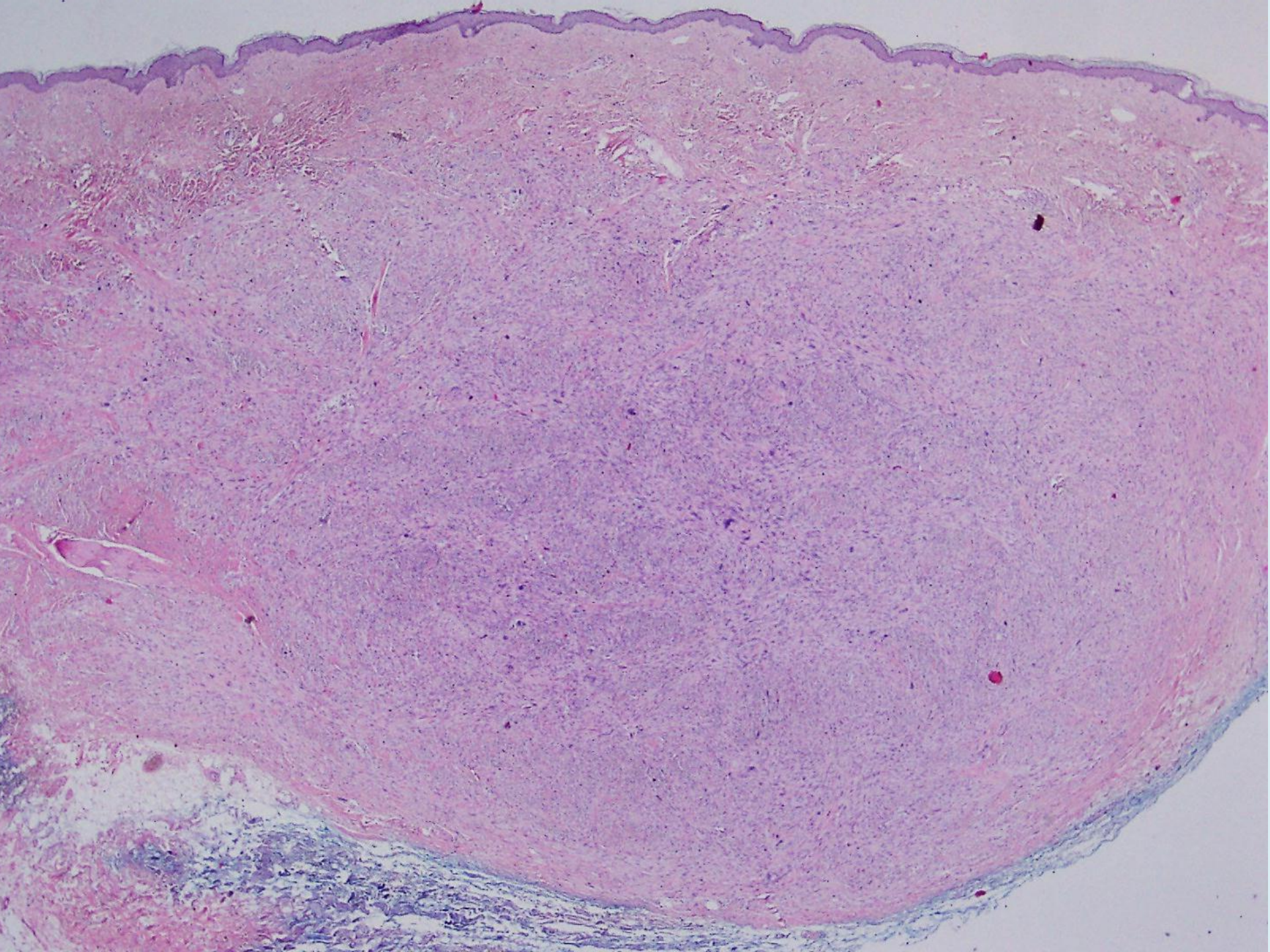


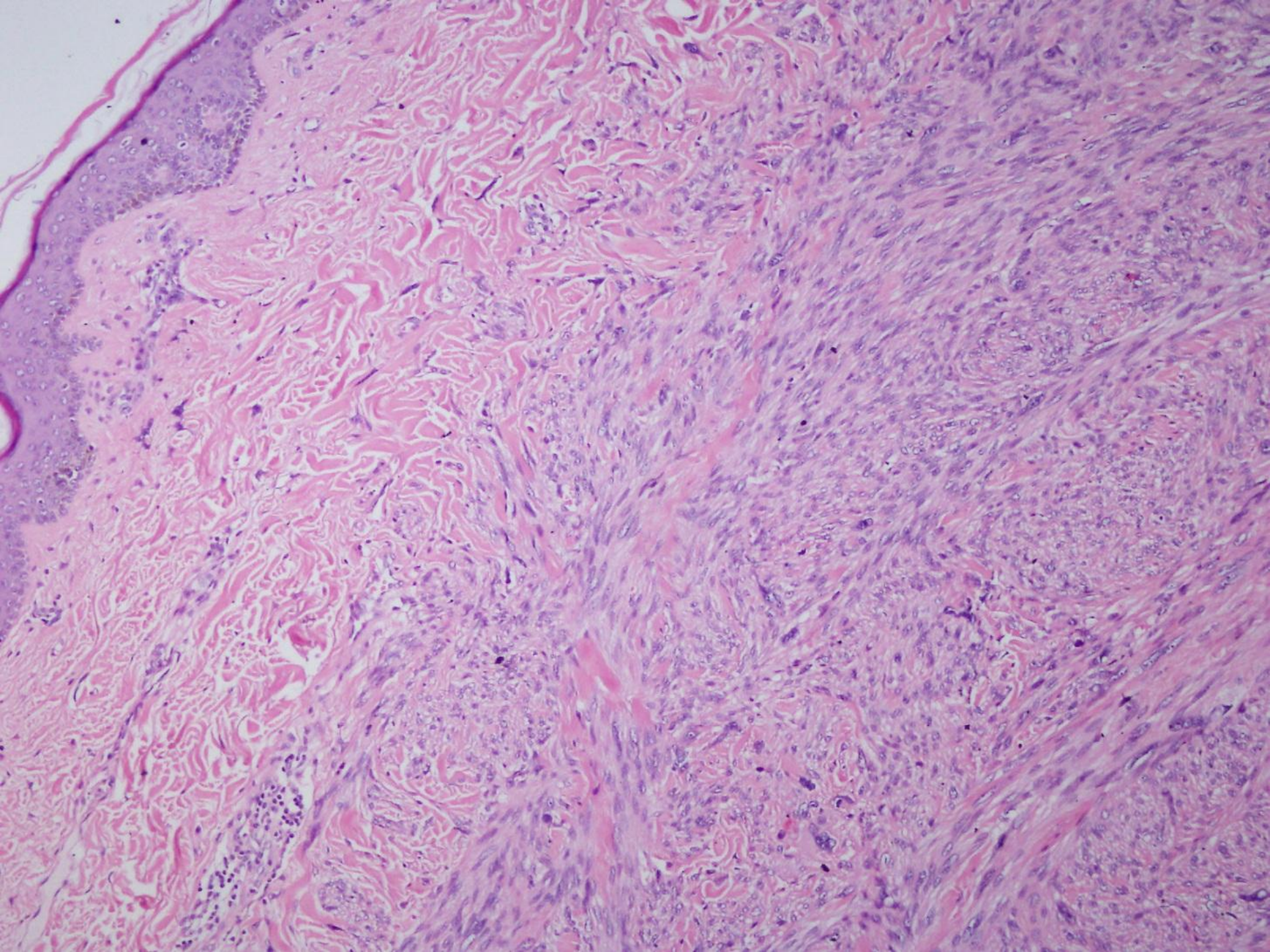
Leiyomyosarkom

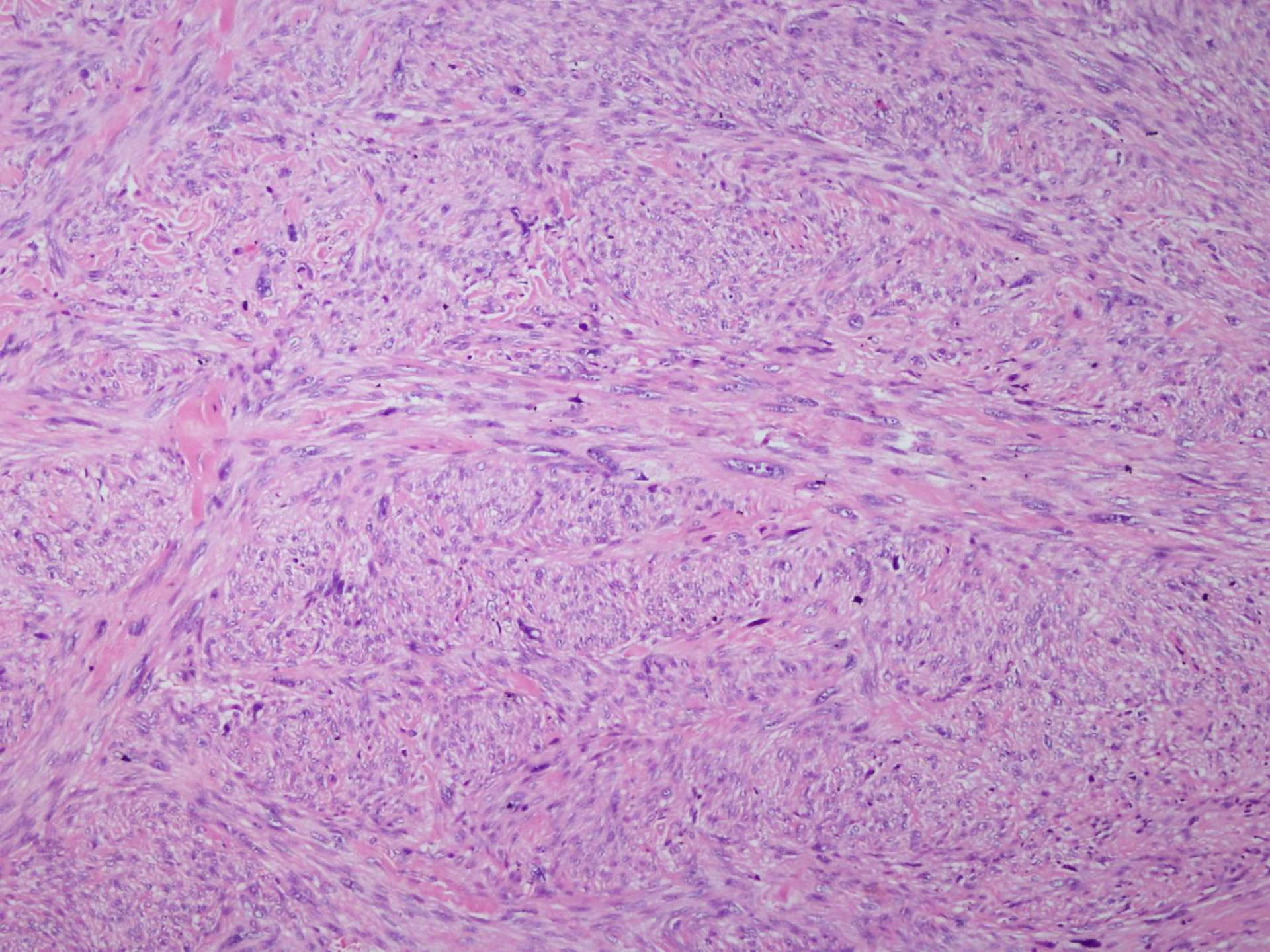
- Kutanöz leiyomyosarkom
- Retroperitoneal leiyomyosarkom
- Derin yumuşak doku leiyomyosarkomu
- Vasküler orijinli leiyomyosarkom
- Epstein-Barr virüs ilişkili leiyomyosarkom (EBV ilişkili düz kas tümörü)

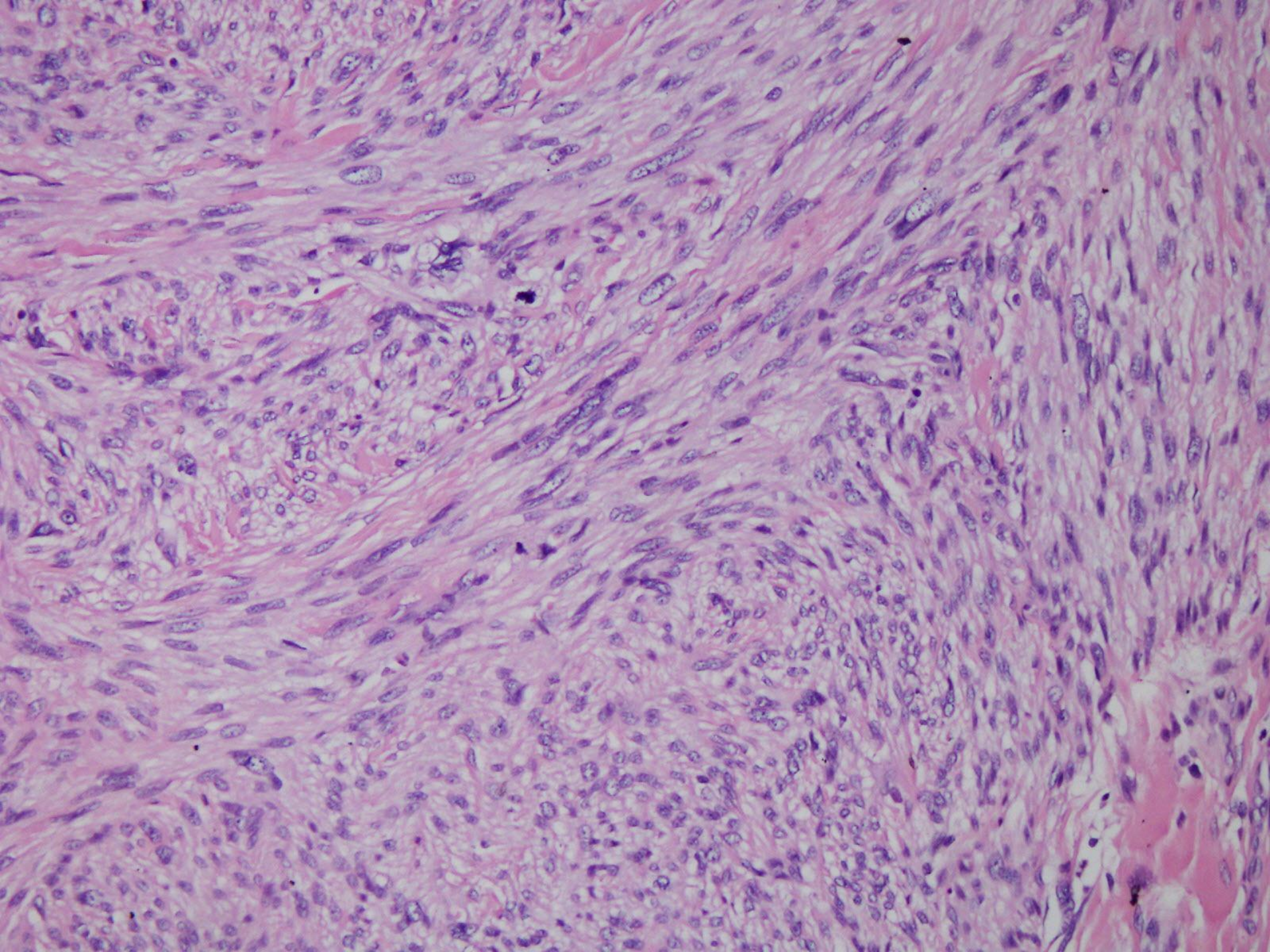
Kutanöz LMS

- Ekstremitelerin ekstensör yüzlerinde
- Erkeklerde 2-3 kat fazla
- Dermal yerleşimli olgular (yüzeyel/minimal subkutanöz infiltrasyon görülebilir)
- Subkutanöz ağırlıklı yerleşmiş LMS olguları derin yumuşak doku LMS grubu içinde değerlendirilmelidir çünkü metastaz riski yakın oranlardadır

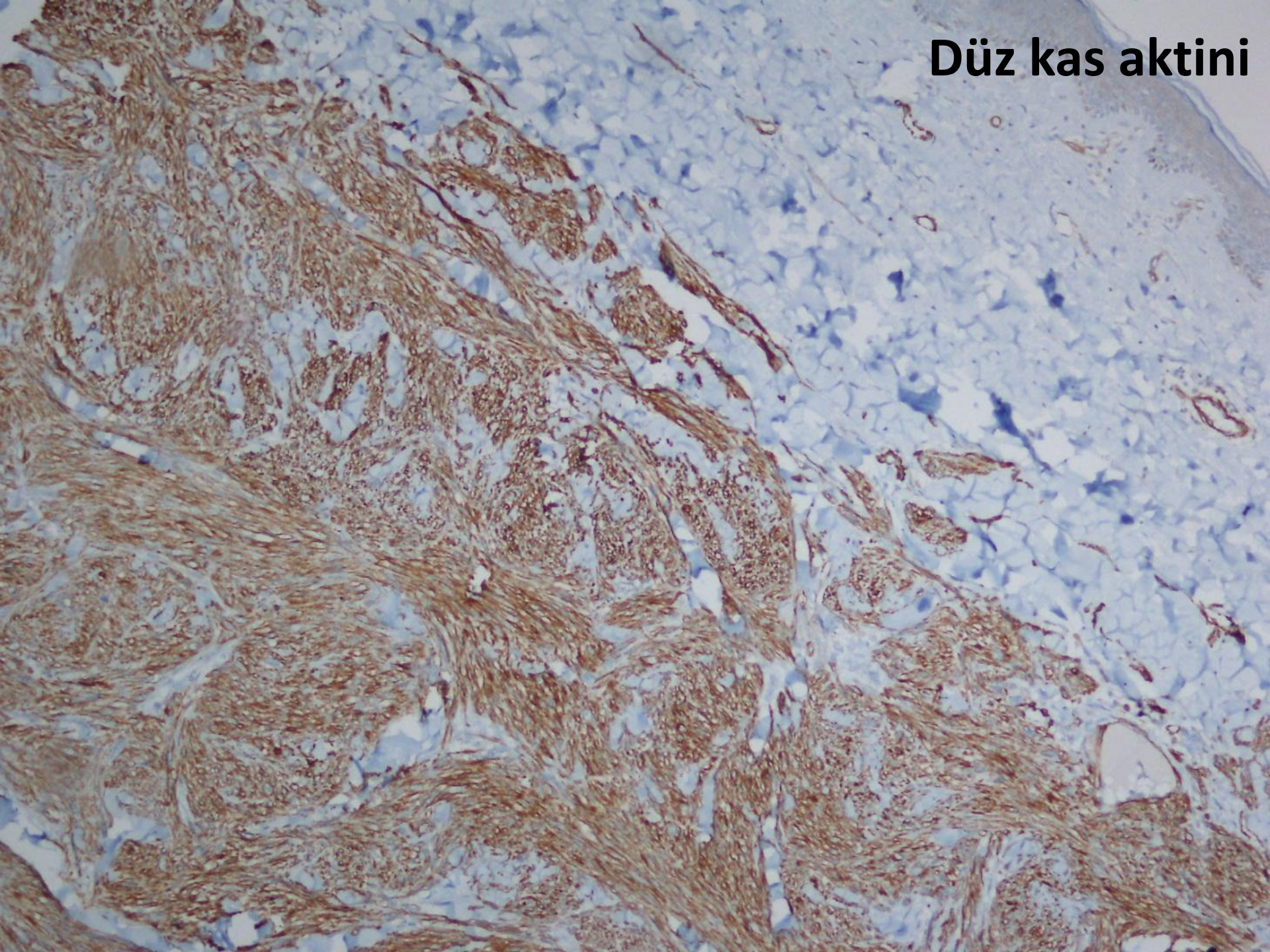


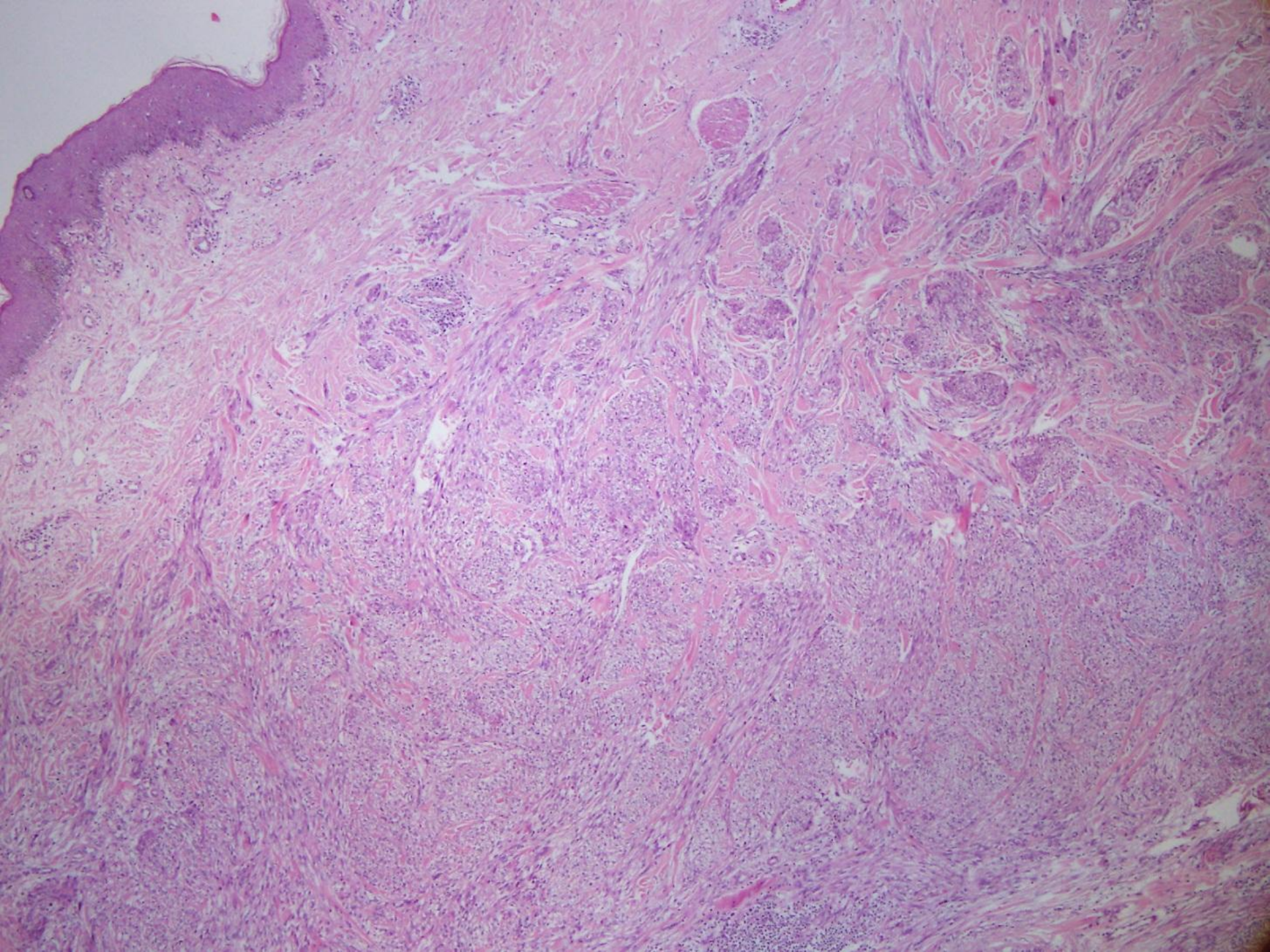


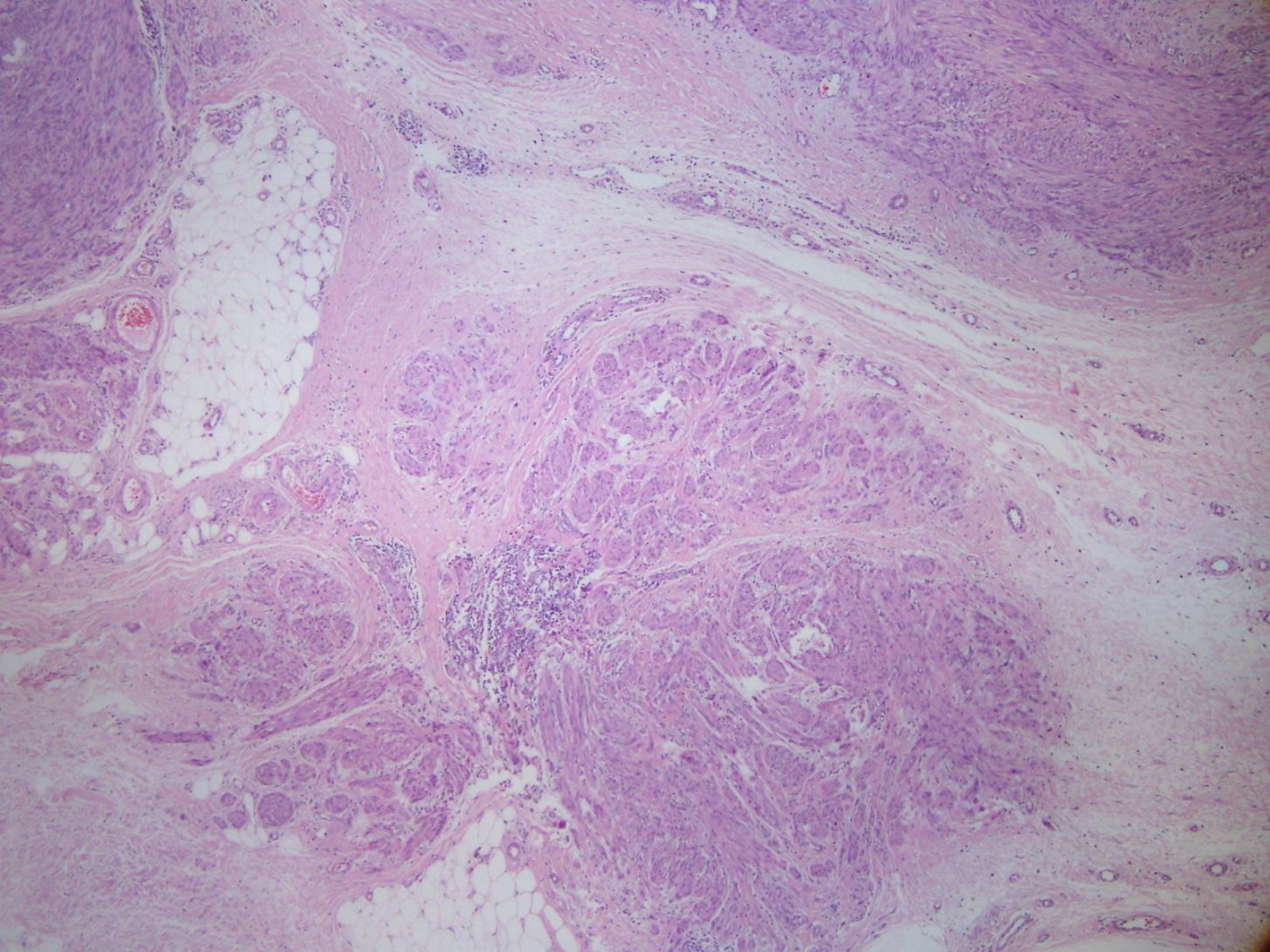


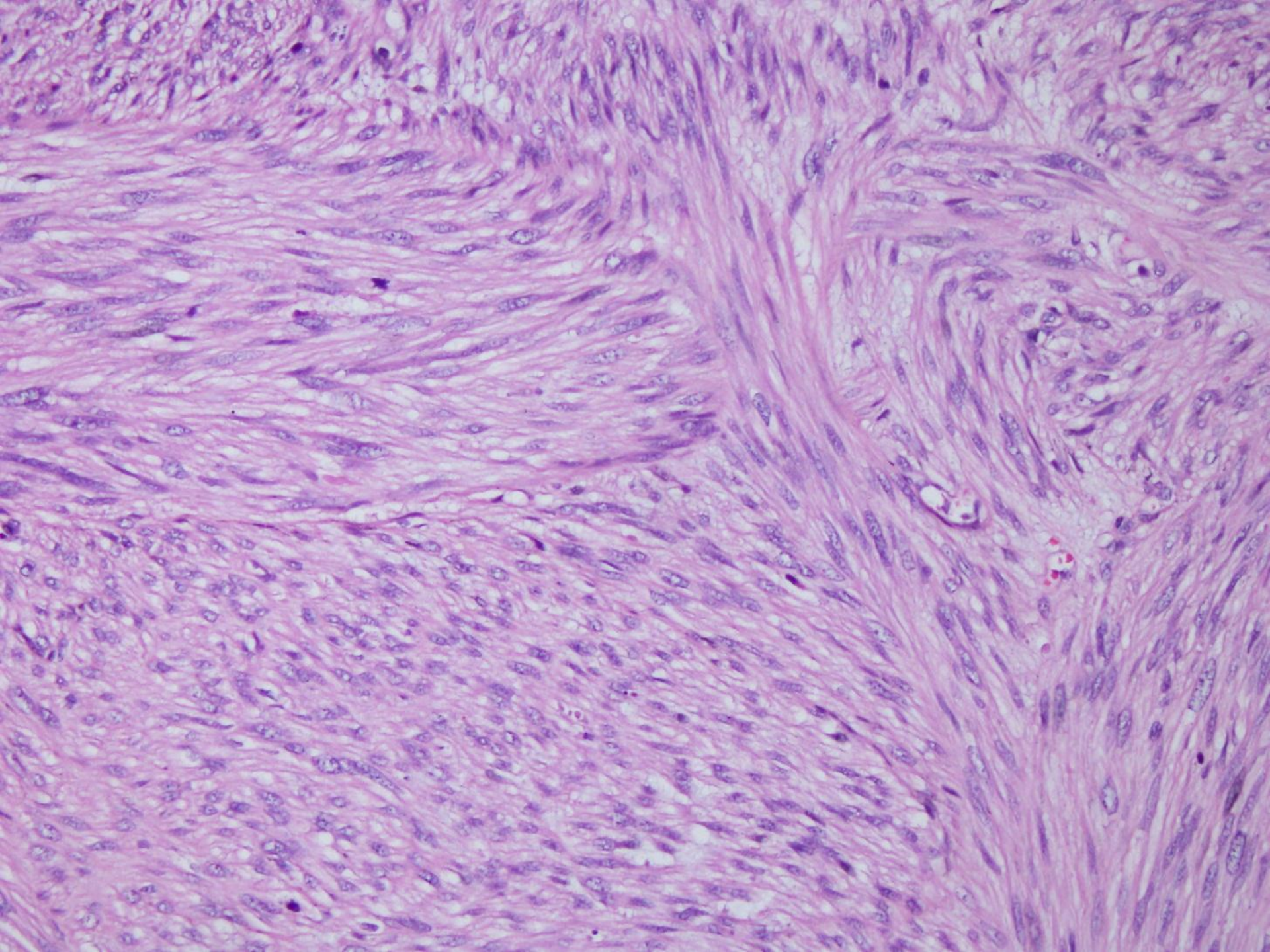


Düz kas aktini









Kutanöz LMS

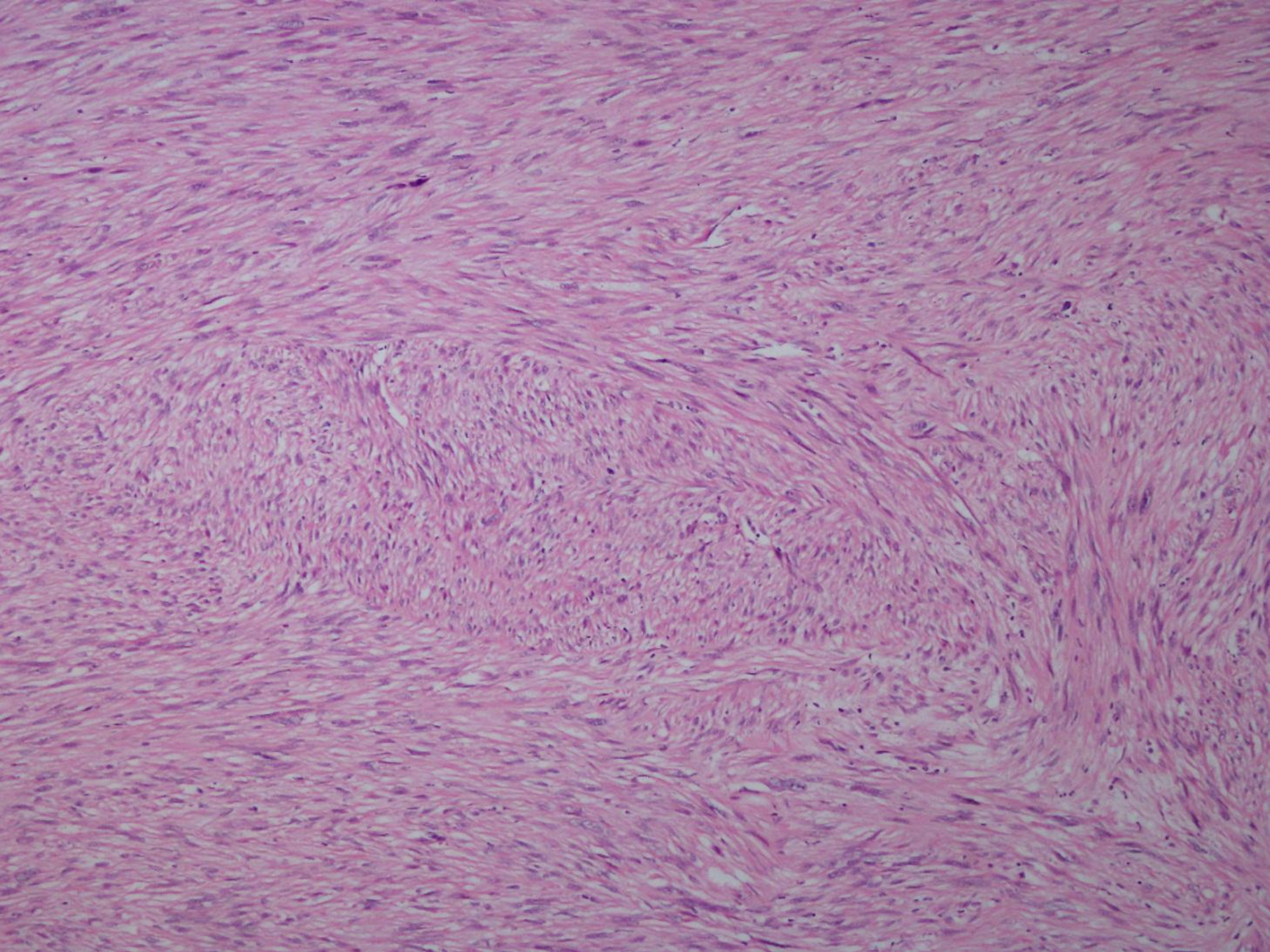
- Dermada sınırlı ise metastaz yapması beklenmez ancak subkutanöz ağırlıklı tümör ise metastaz oranı %30-40
- Primer dermal yerleşimli iki geniş seride lokal nüks oranları %34 ve %11 ve sadece bir olguda geç dönemde metastaz var
- Olgular genelde (%60-97) derece I özelliğinde
- Nüks eden olgular genelde cerrahi sınır pozitif
- Kutanöz LMS olguları için “atipik intradermal düz kas tümörü” terimi önerilmiş

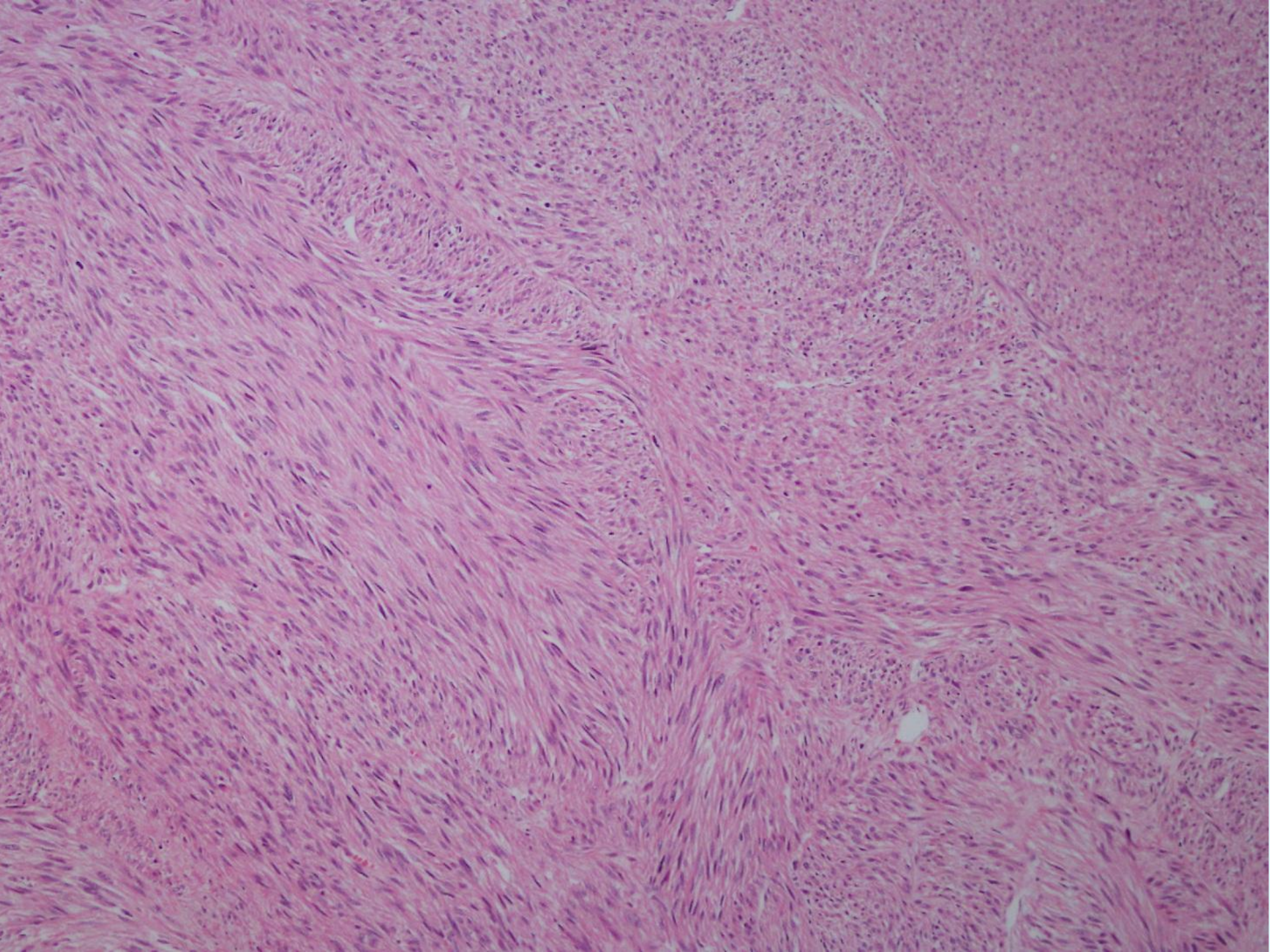
Derin yerleşimli Leiomyosarkom

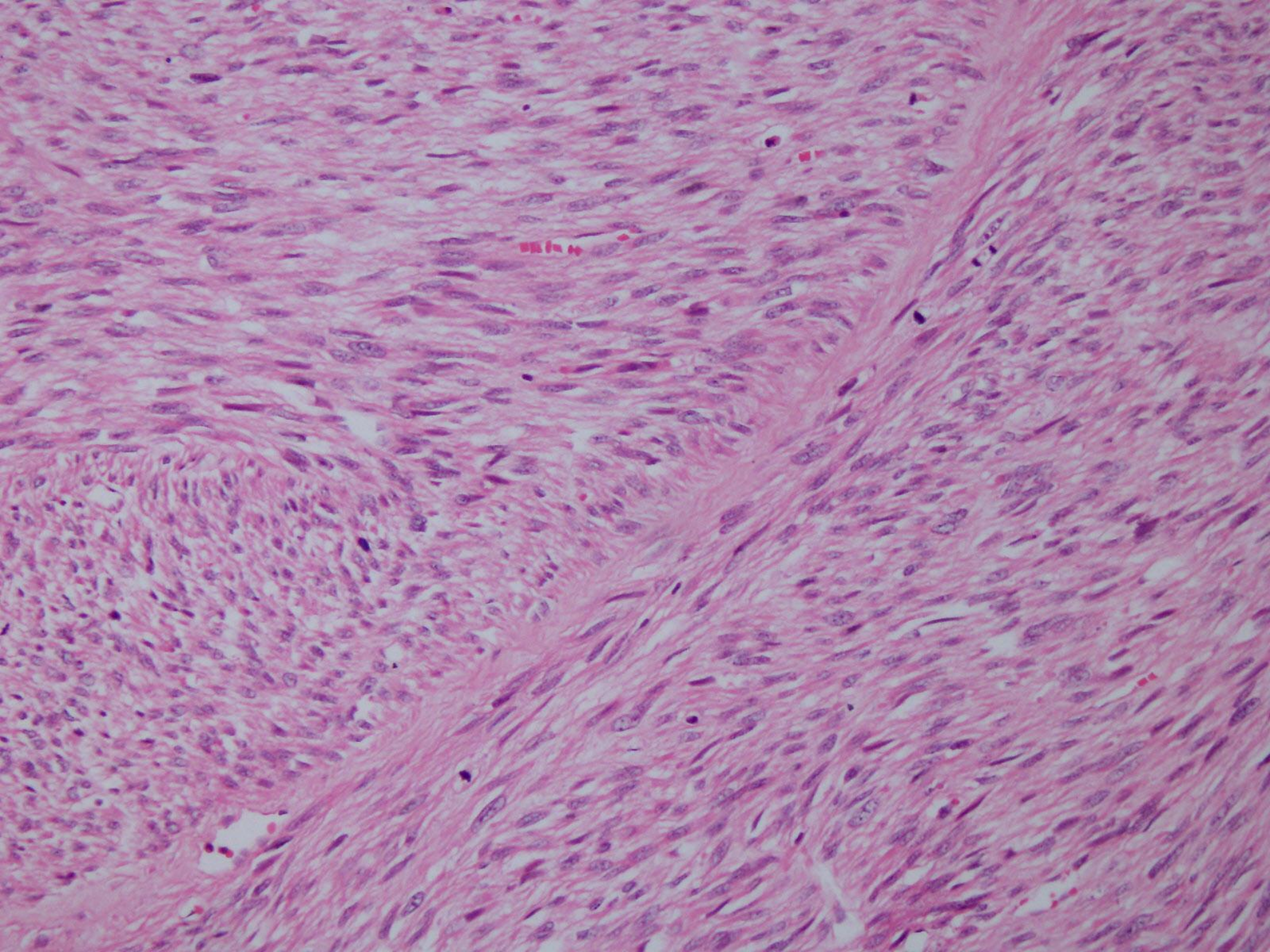
- Yarısından fazlası retroperiton yerleşimli ve bu olguların yaklaşık üçte ikisi kadın
- Ortalama görülme yaşı 60
- Kas içi yerleşimli olgular en sık alt ekstremitede, cinsiyet farkı yok
- Vasküler orijinli LMS orta-büyük çaplı damar duvarlarında görülür, en sık vena cava inferiorda ve olguların %80-90'ı kadın

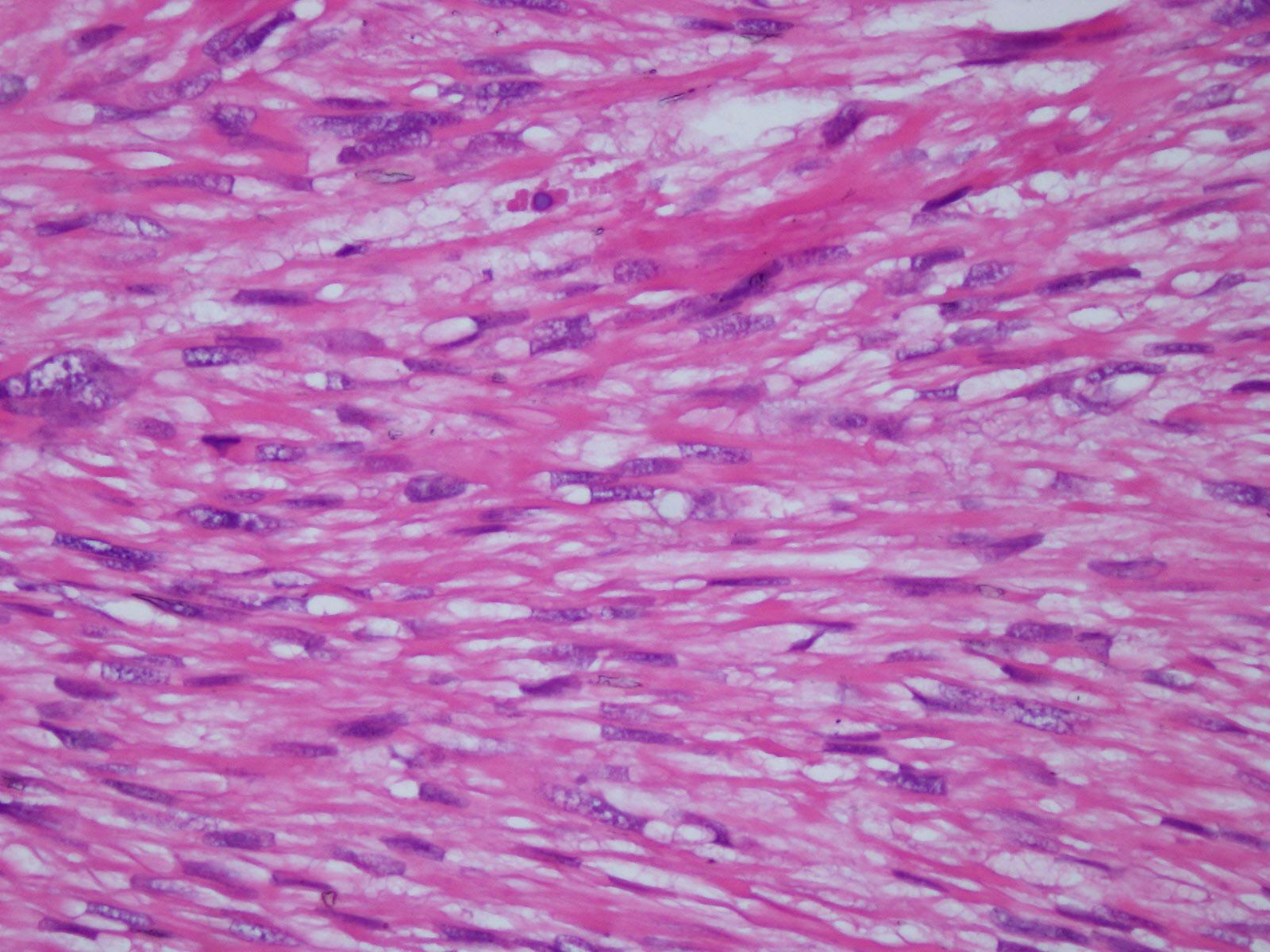
Epstein-Barr virüs ilişkili leiomyosarkom

- İmmun sistemleri baskı altında olan AIDS, organ transplantlı hastalarda
- İnsitu hibridizasyon yöntemi ile EBV saptanabilir
- Prognoz hastanın immün durumu ile ilişkilidir ve antiviral tedavi ve hastanın immunsupresyon tedavi dozunun azaltılması ile yanıt alınabilir
- Multipl tümörler multifokalite ile ilişkilidir
- “EBV ilişkili düz kas tümörü” terimi önerilmekte

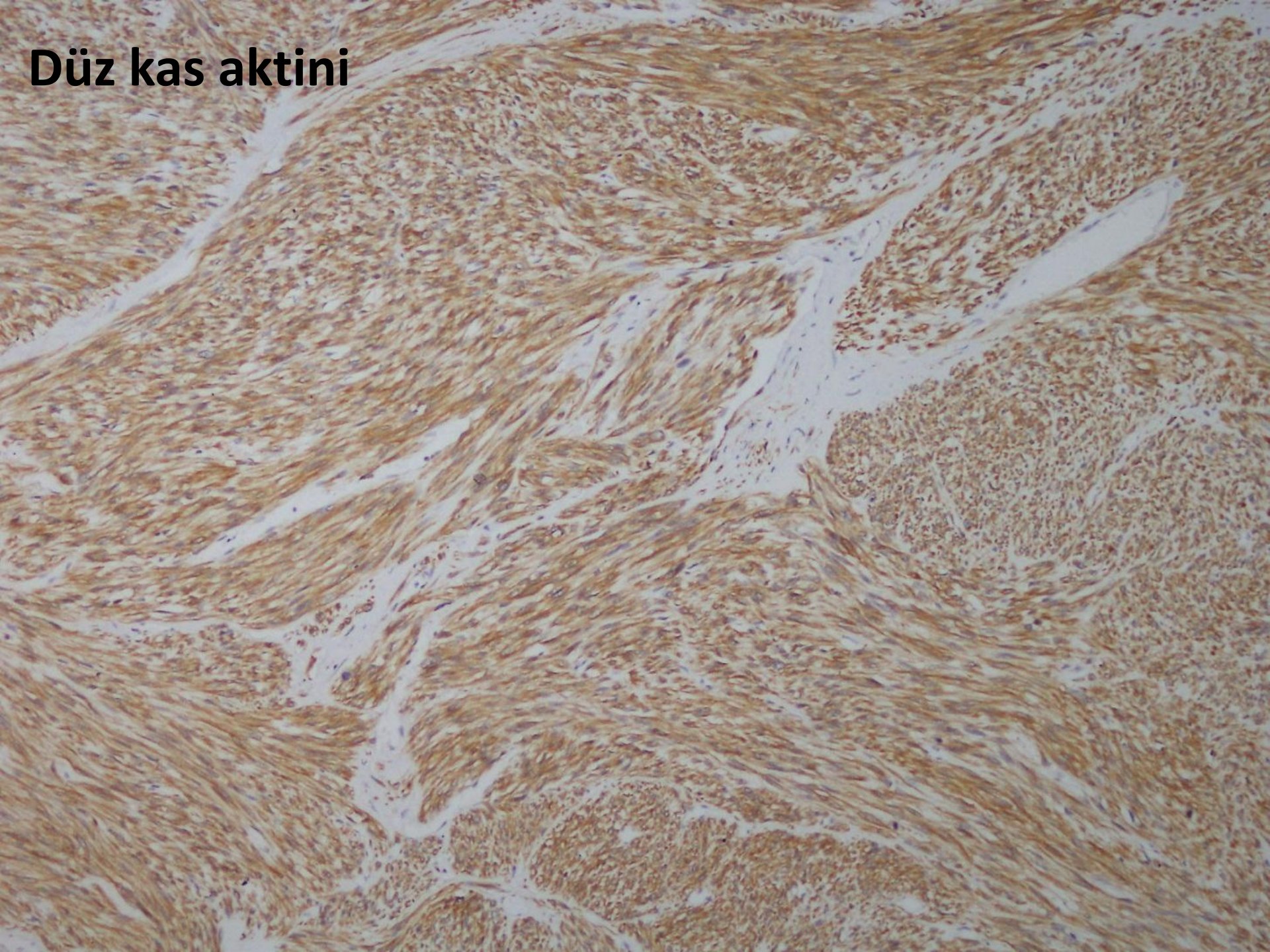




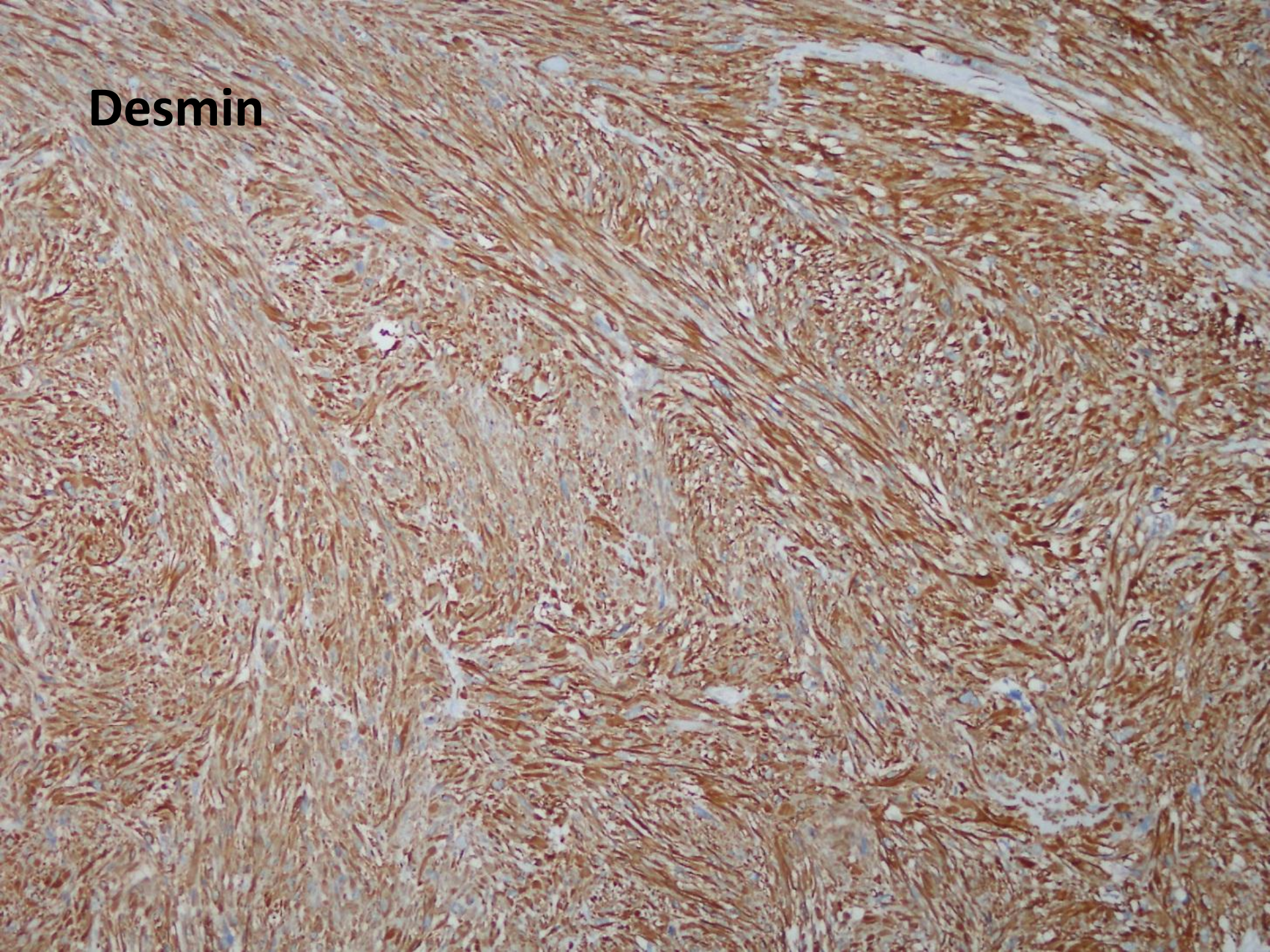




Düz kas aktini



Desmin

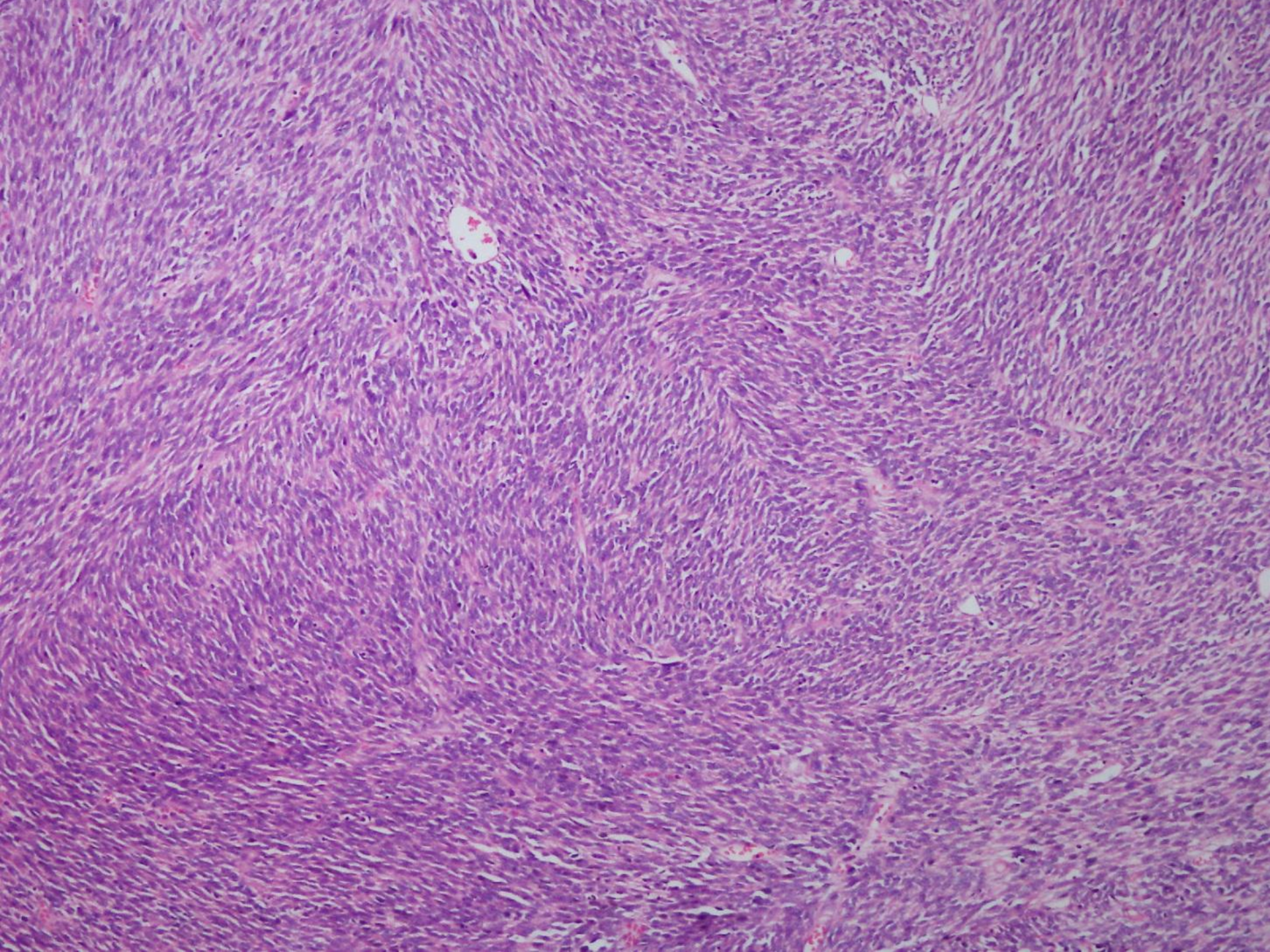


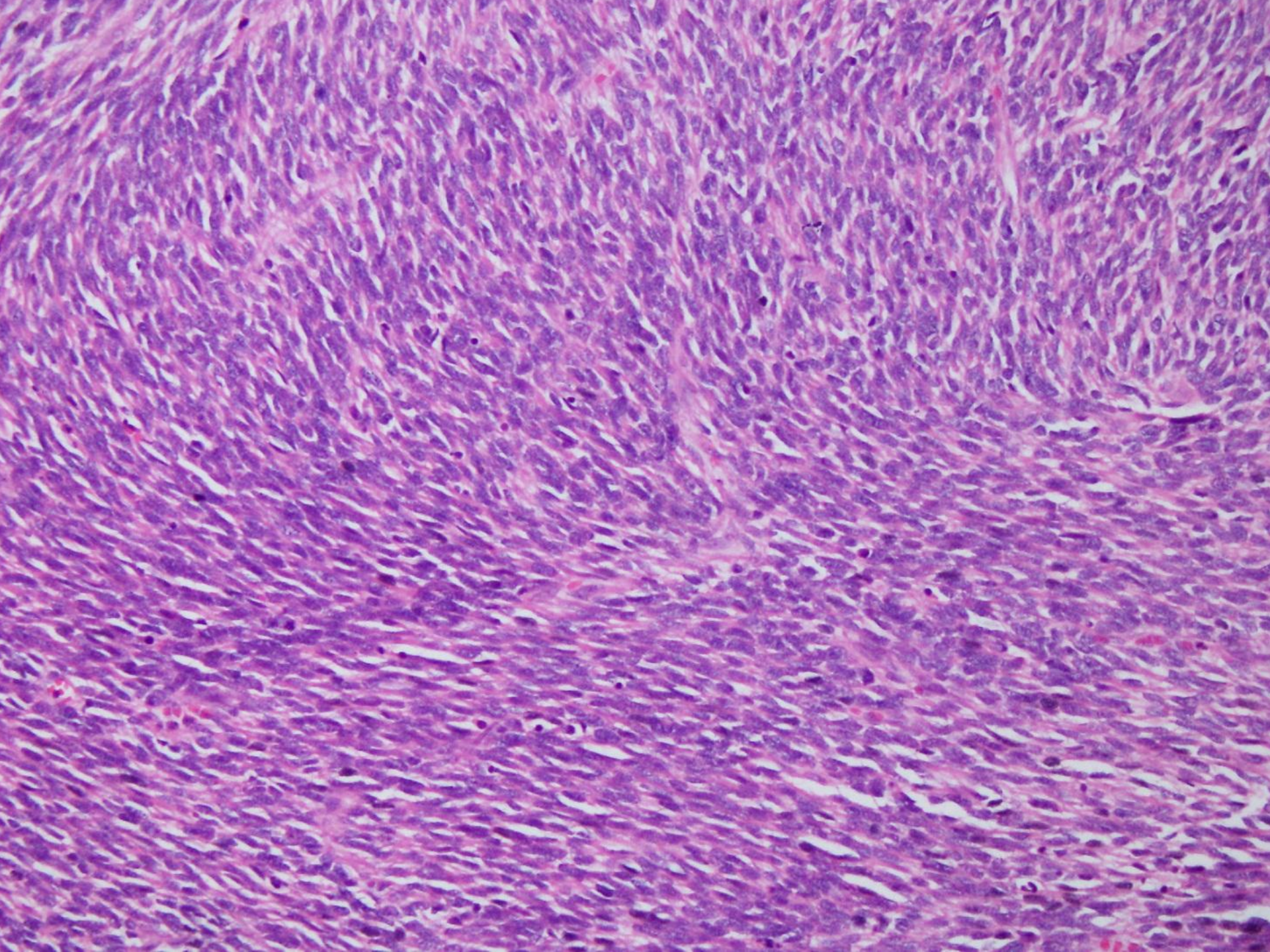
Leiyomyosarkom, İHK

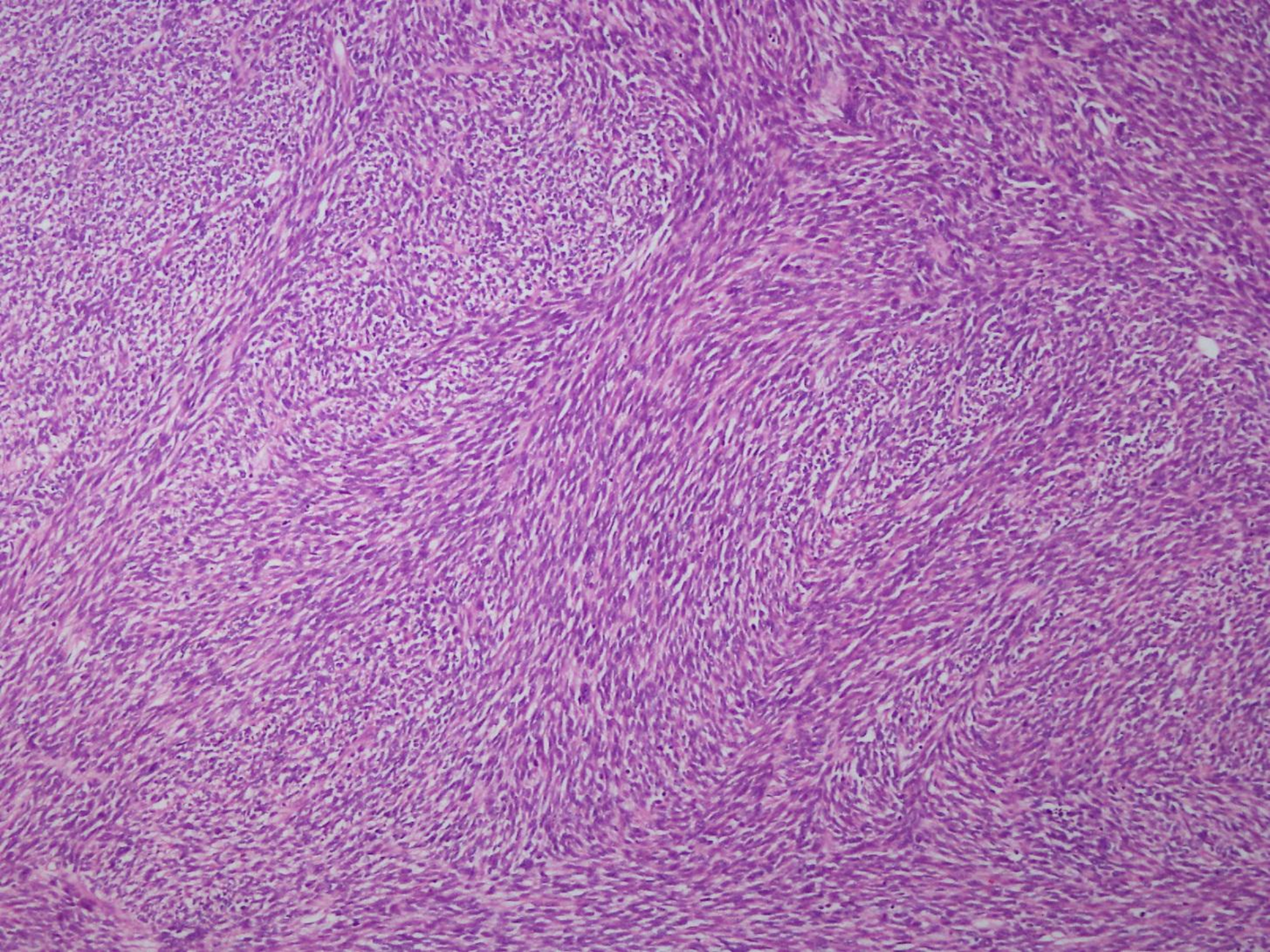
- Leiyomyosarkom olgularının %70-80'inde desmin, %90-95'inde aktin pozitifliği var
- H-kaldesmon daha spesifik ancak duyarlılığı daha az
- Aberran sitokeratin, EMA, CD-34, östrojen ve progesteron reseptör pozitifliği olabilir

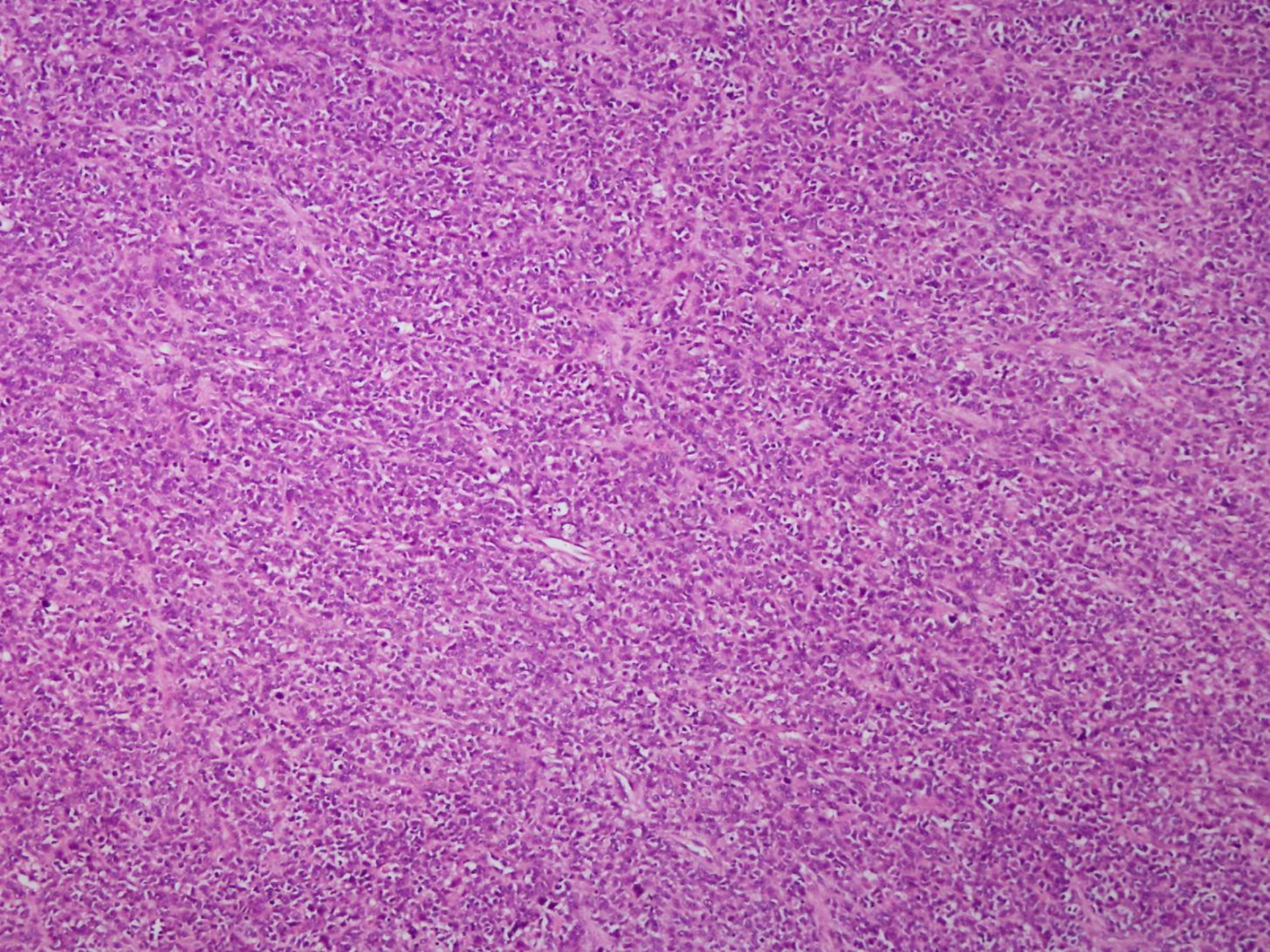
Leiyomyosarkom, ayırıcı tanı

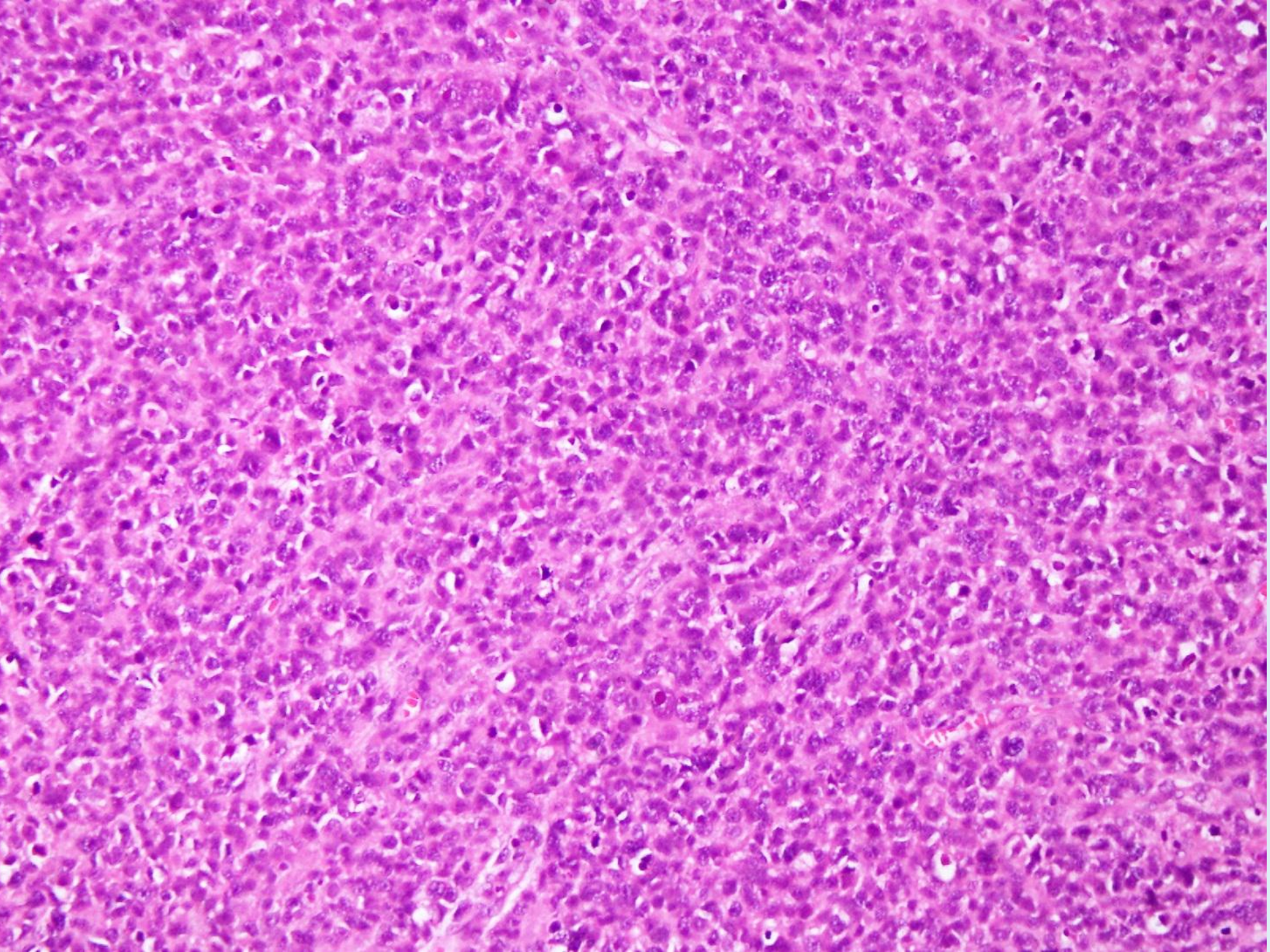
- Nodüler fasiitis,
- Sellüler fibröz histiyositom
- Leiyomyom
- Sellüler schwannom
- Ekstra gastrointestinal stromal tümör
- Pleomorfik sarkom (malign fibröz histiyositom),
- Malign periferik sinir kılıfı tümörü
- Sinovyal sarkom
- Fibromatozis
- Dediferansiye liposarkom

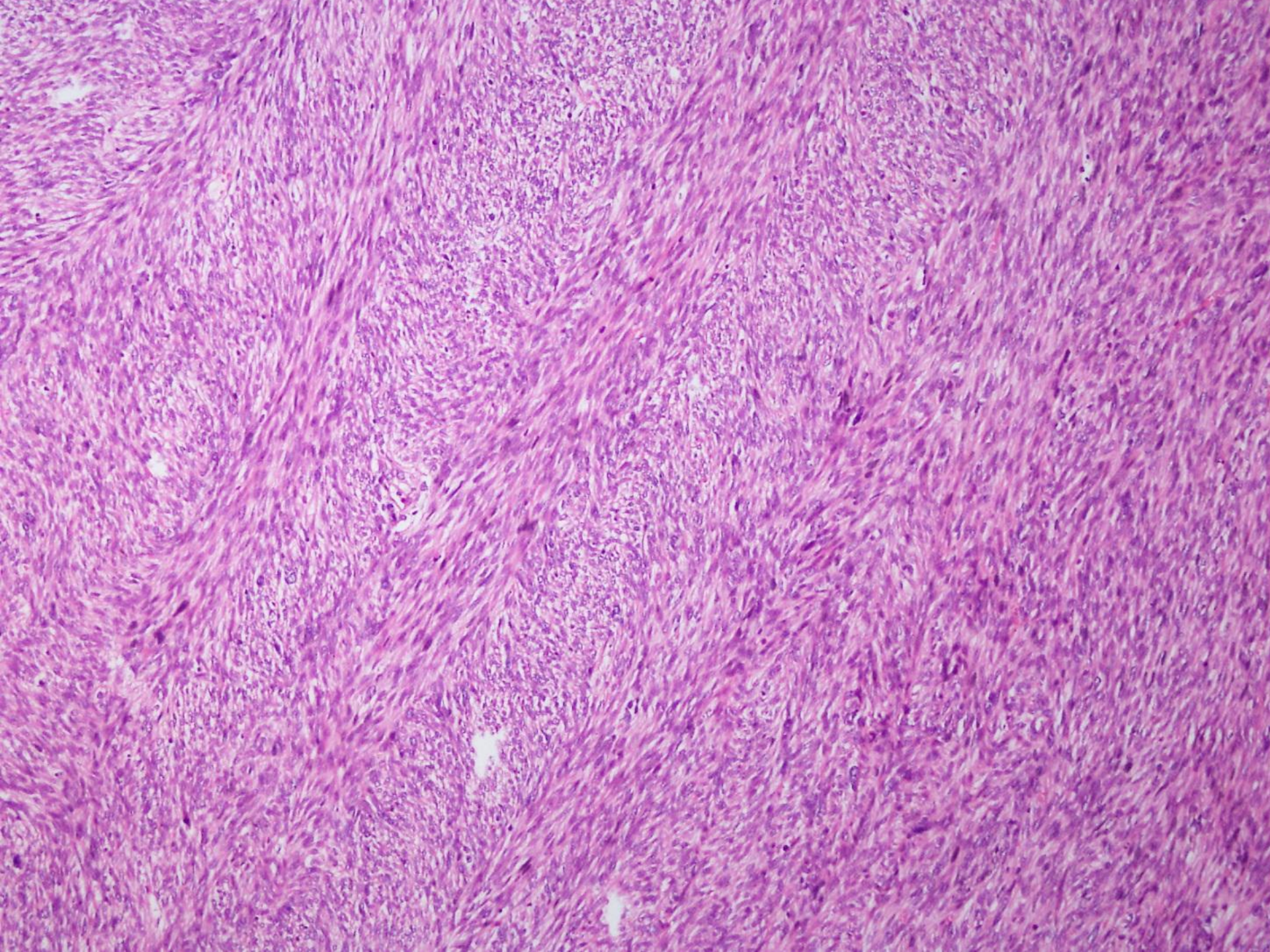




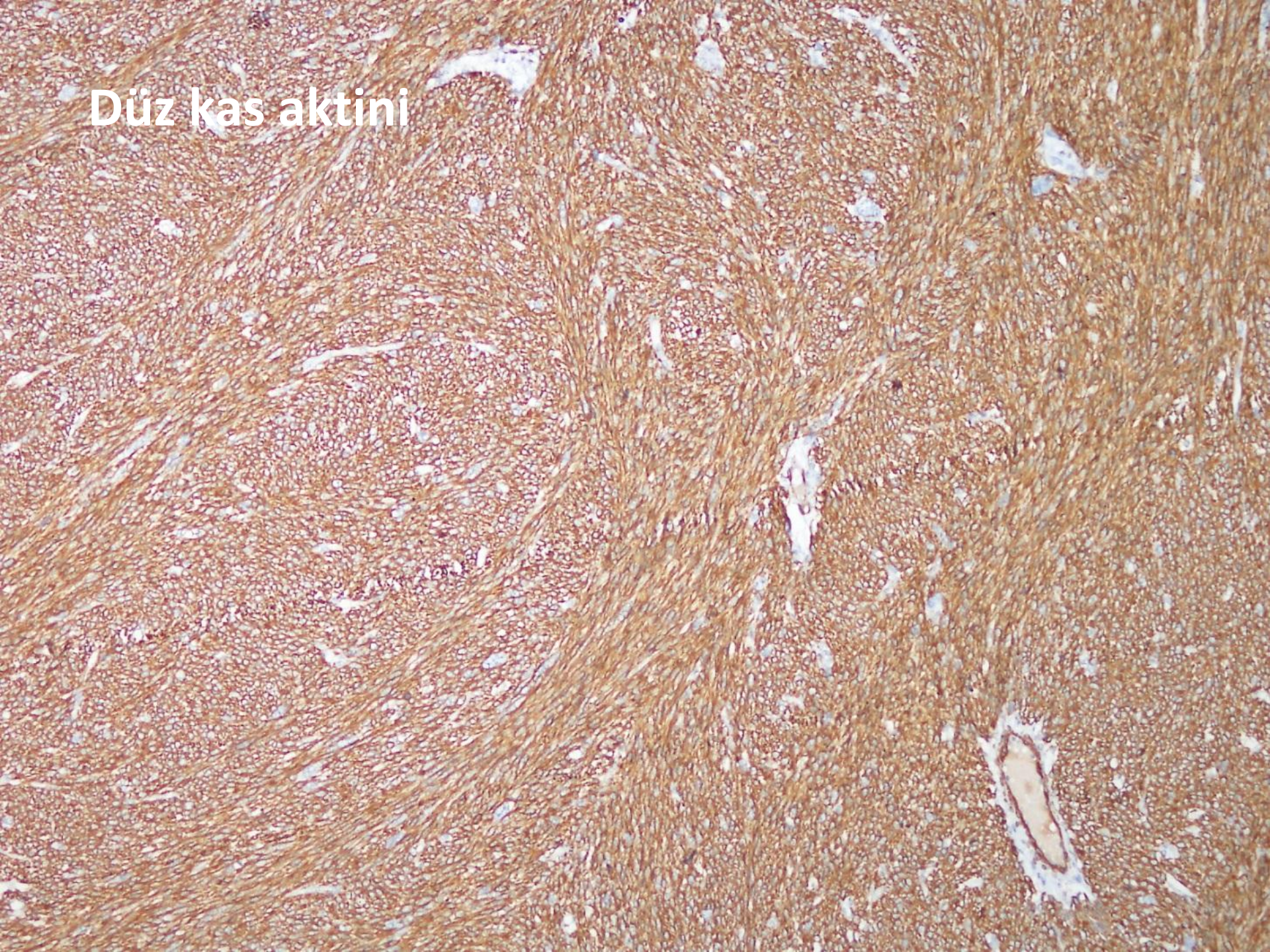


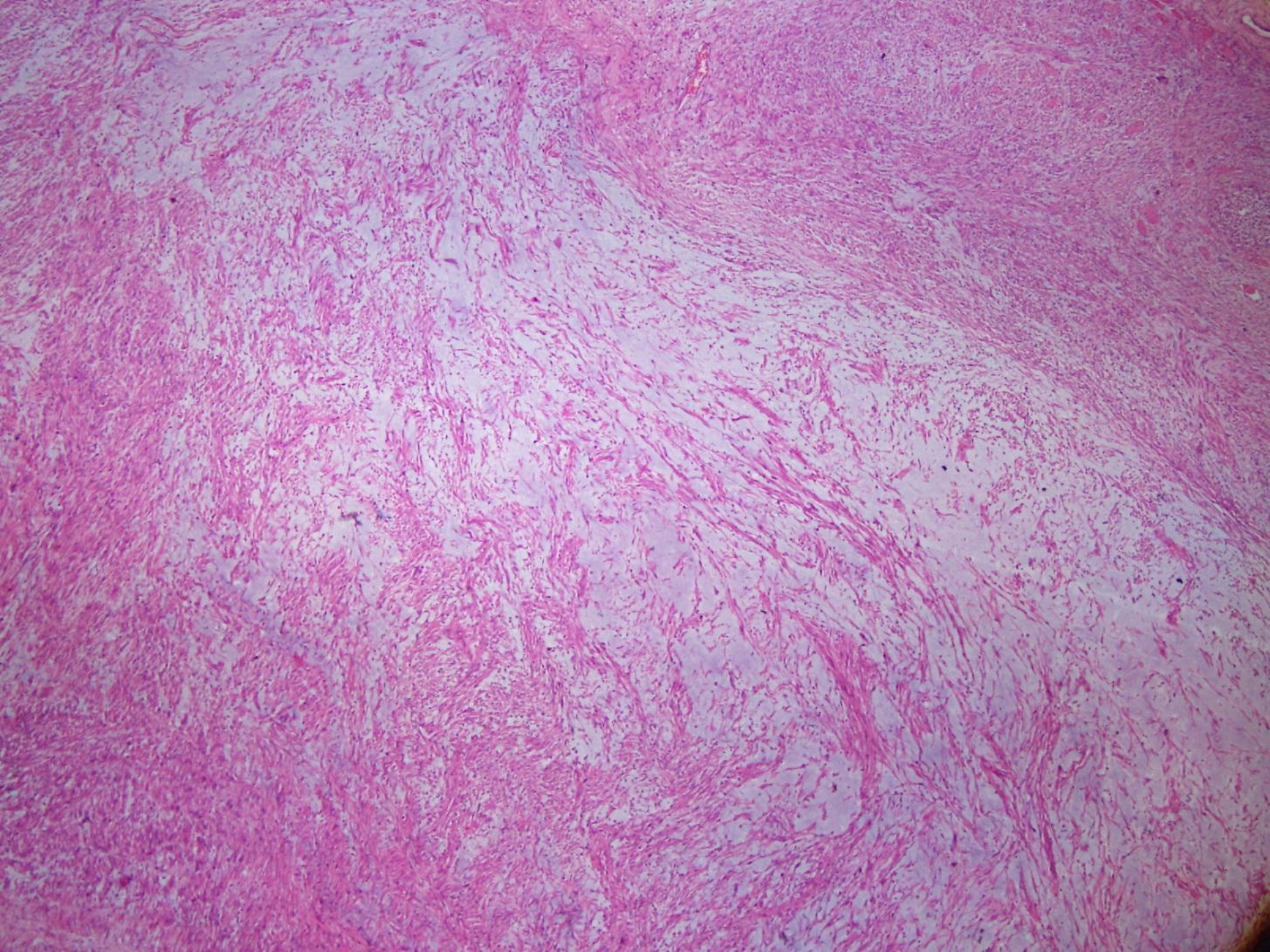


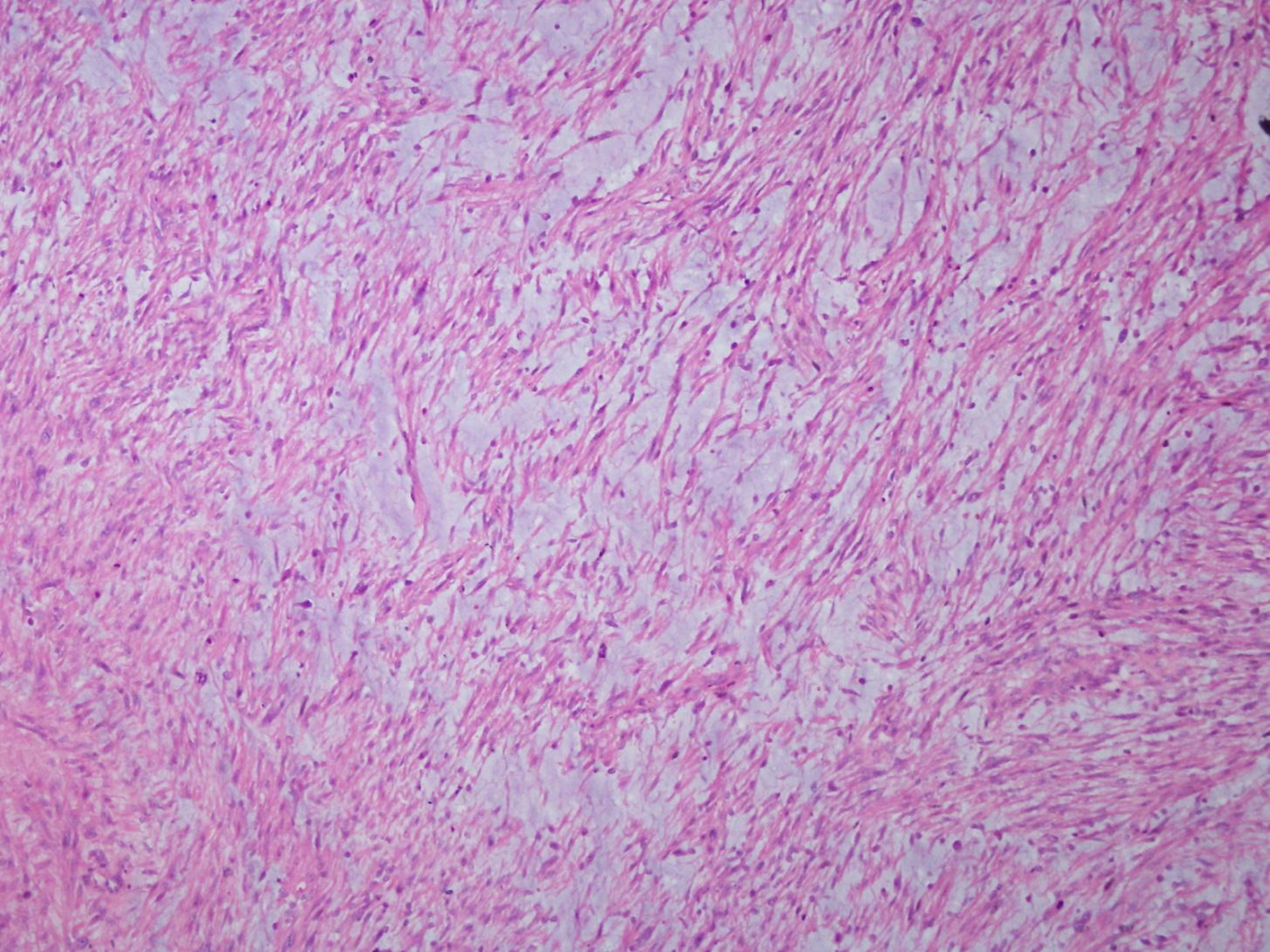


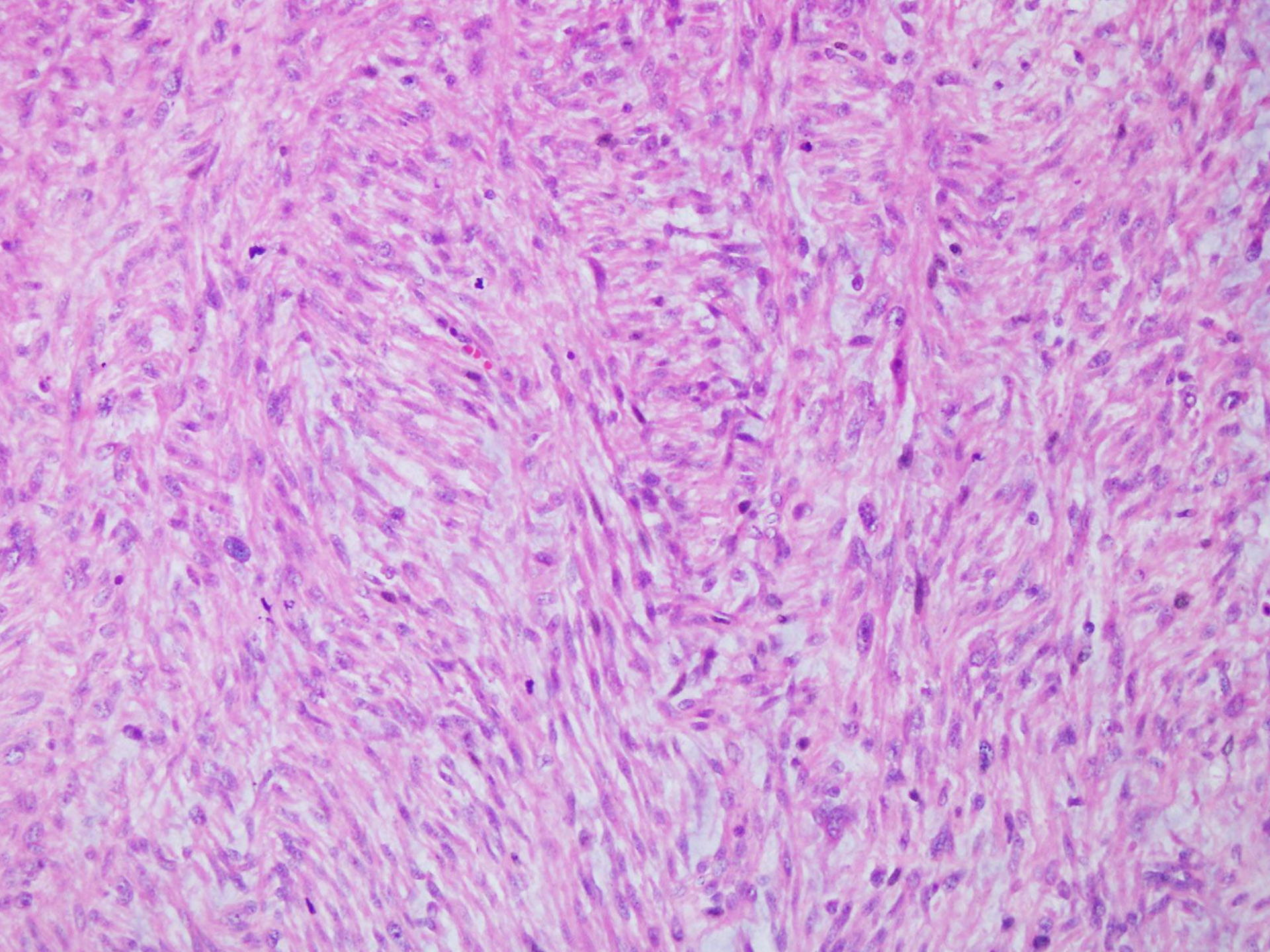


Düz kas aktini

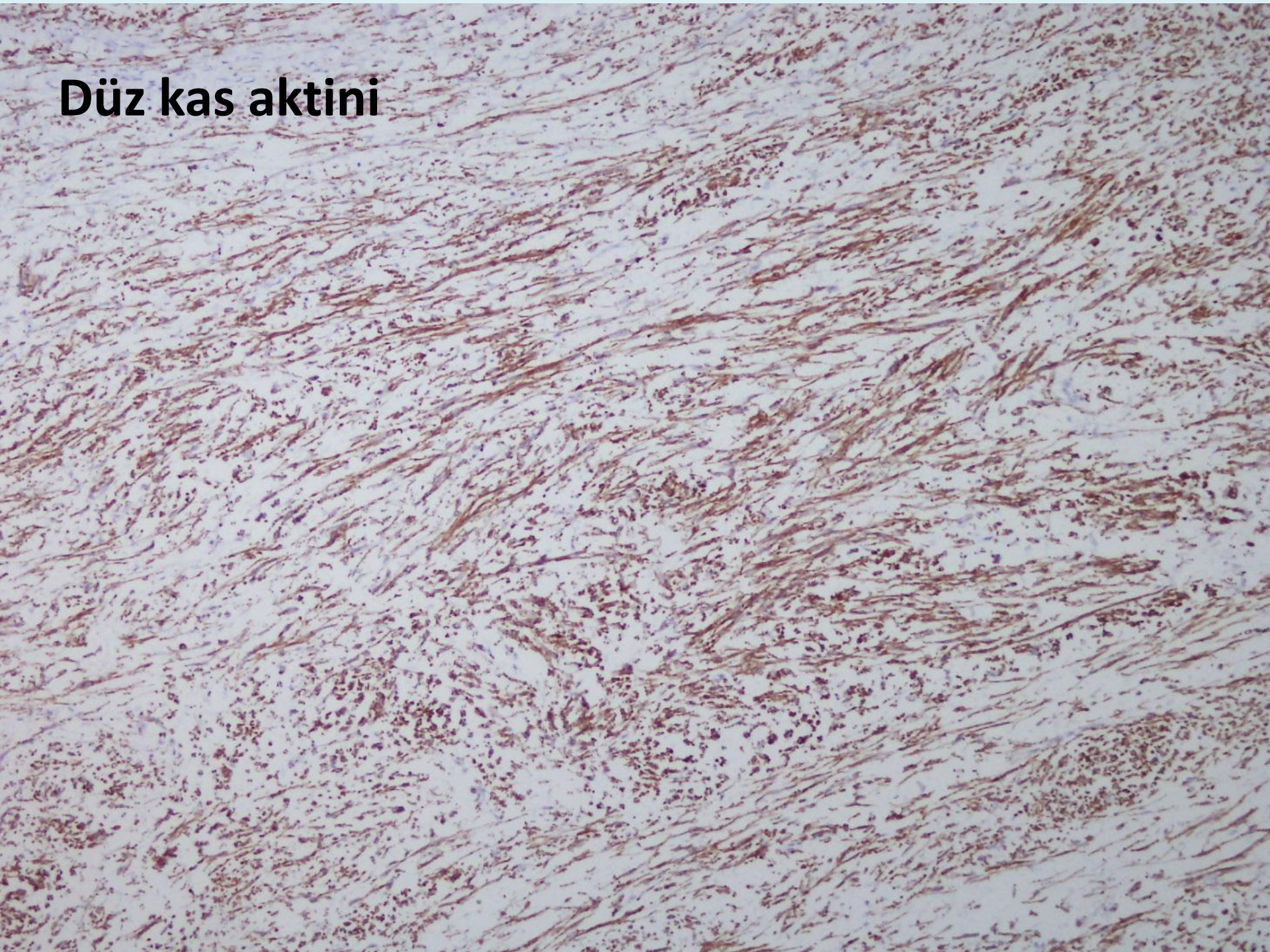


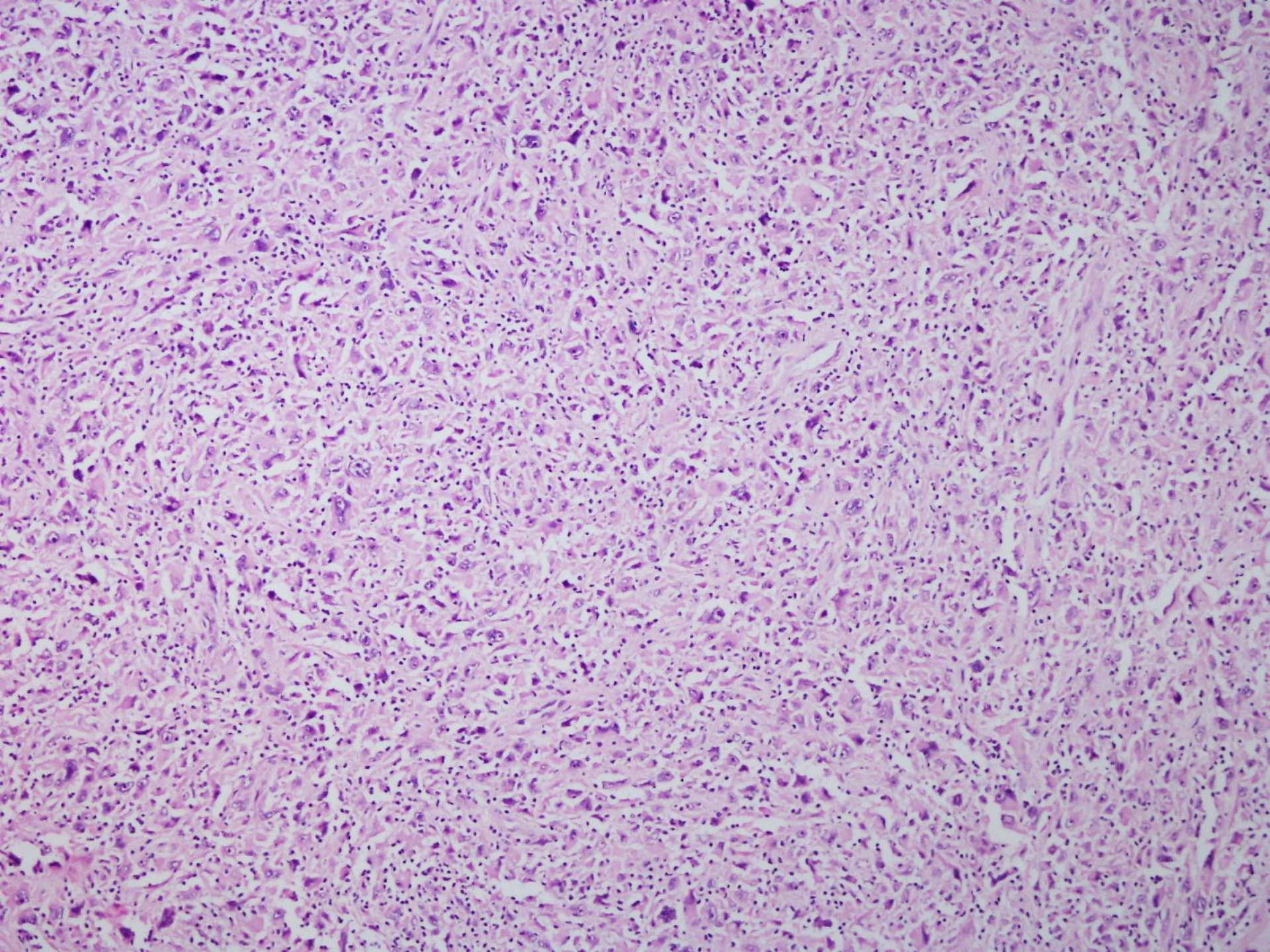


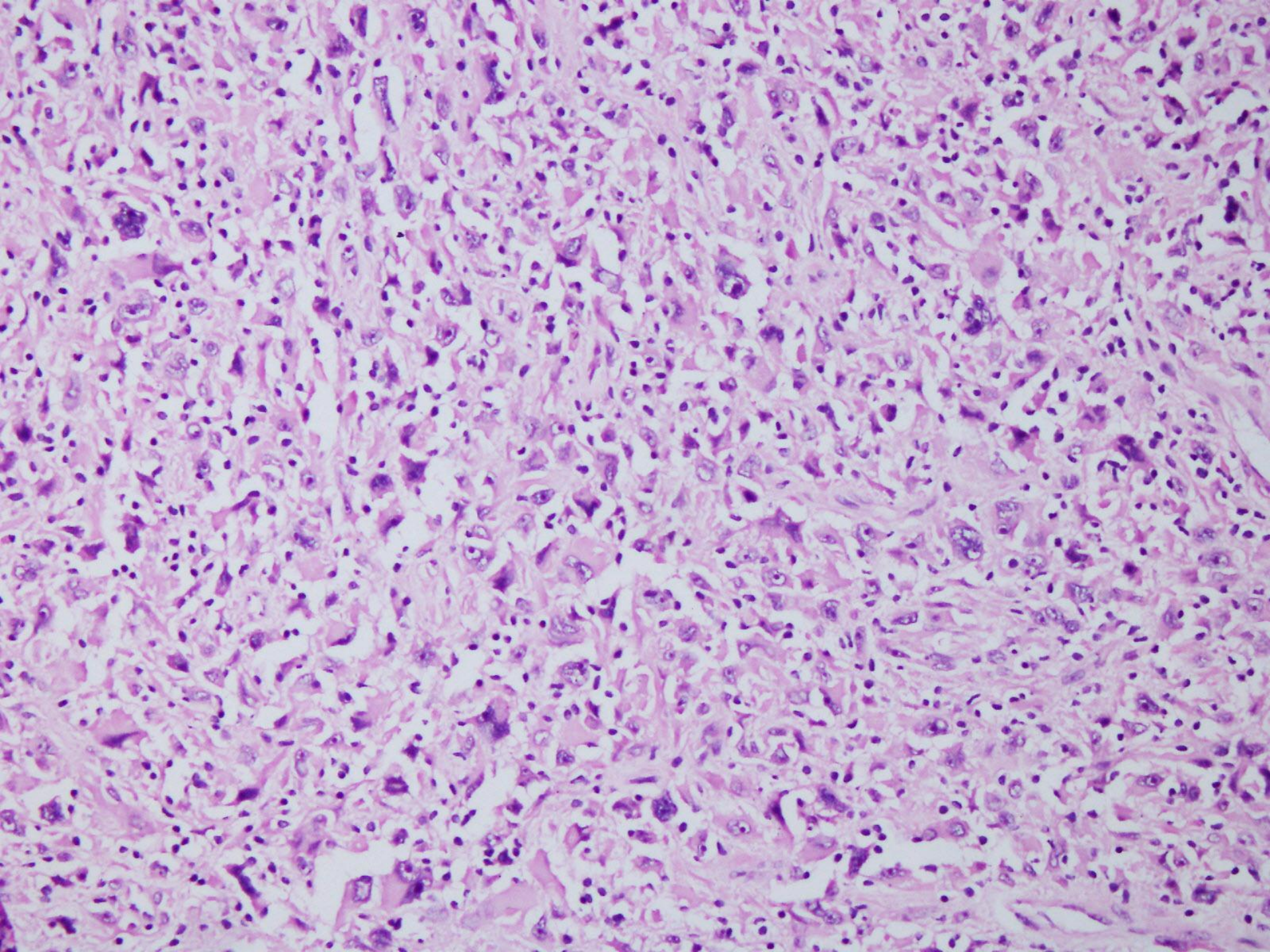


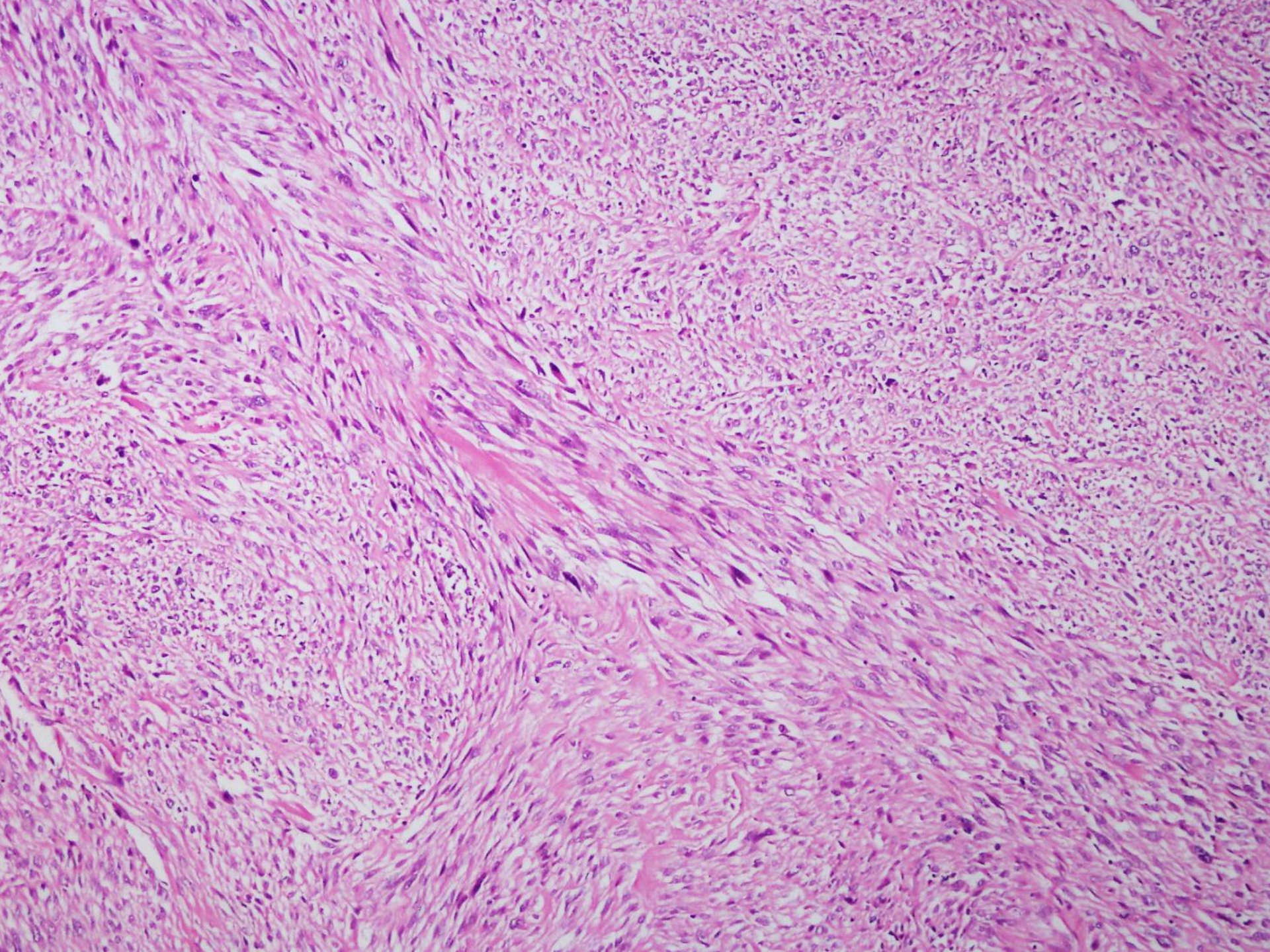


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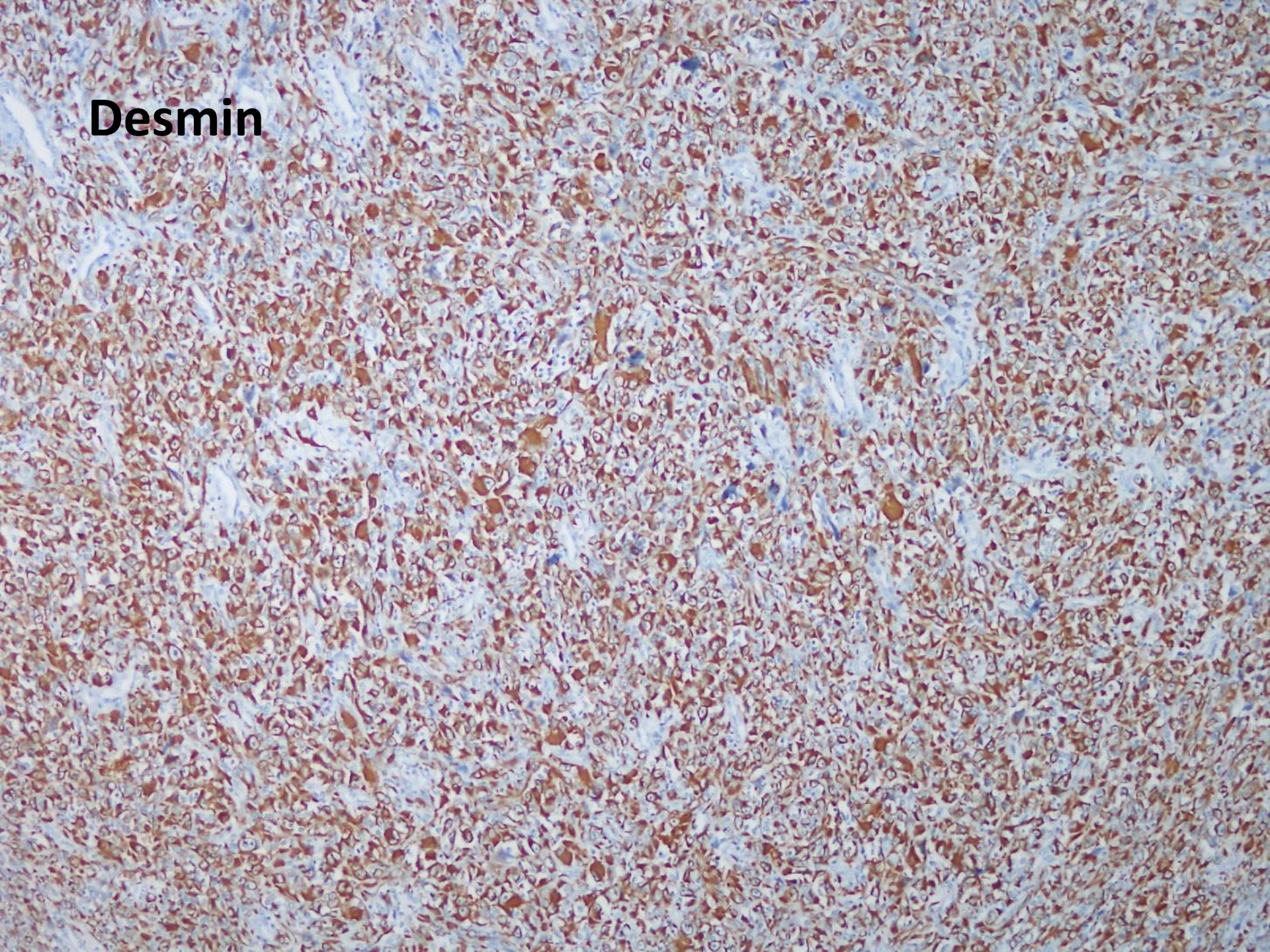




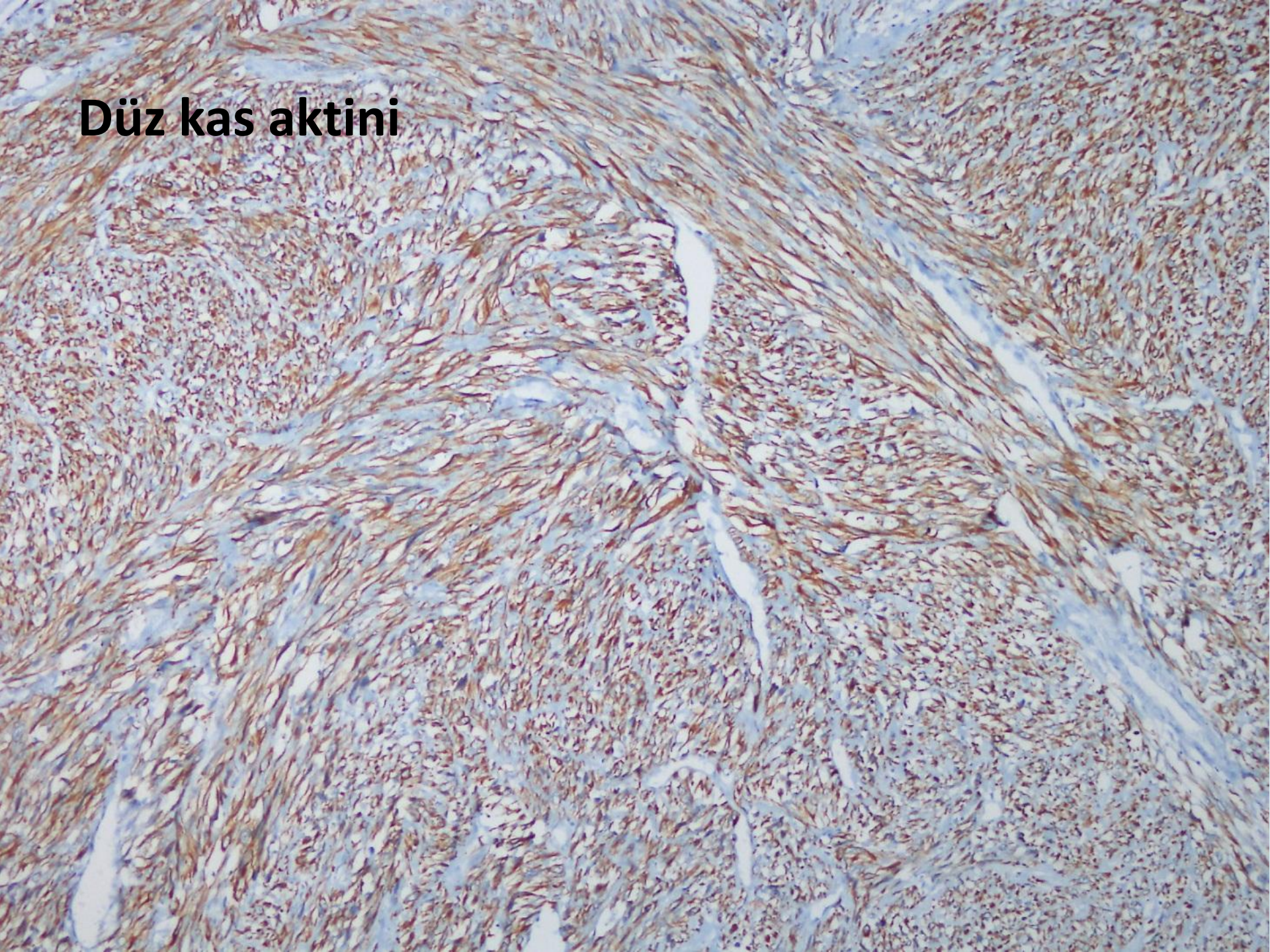




Desmin



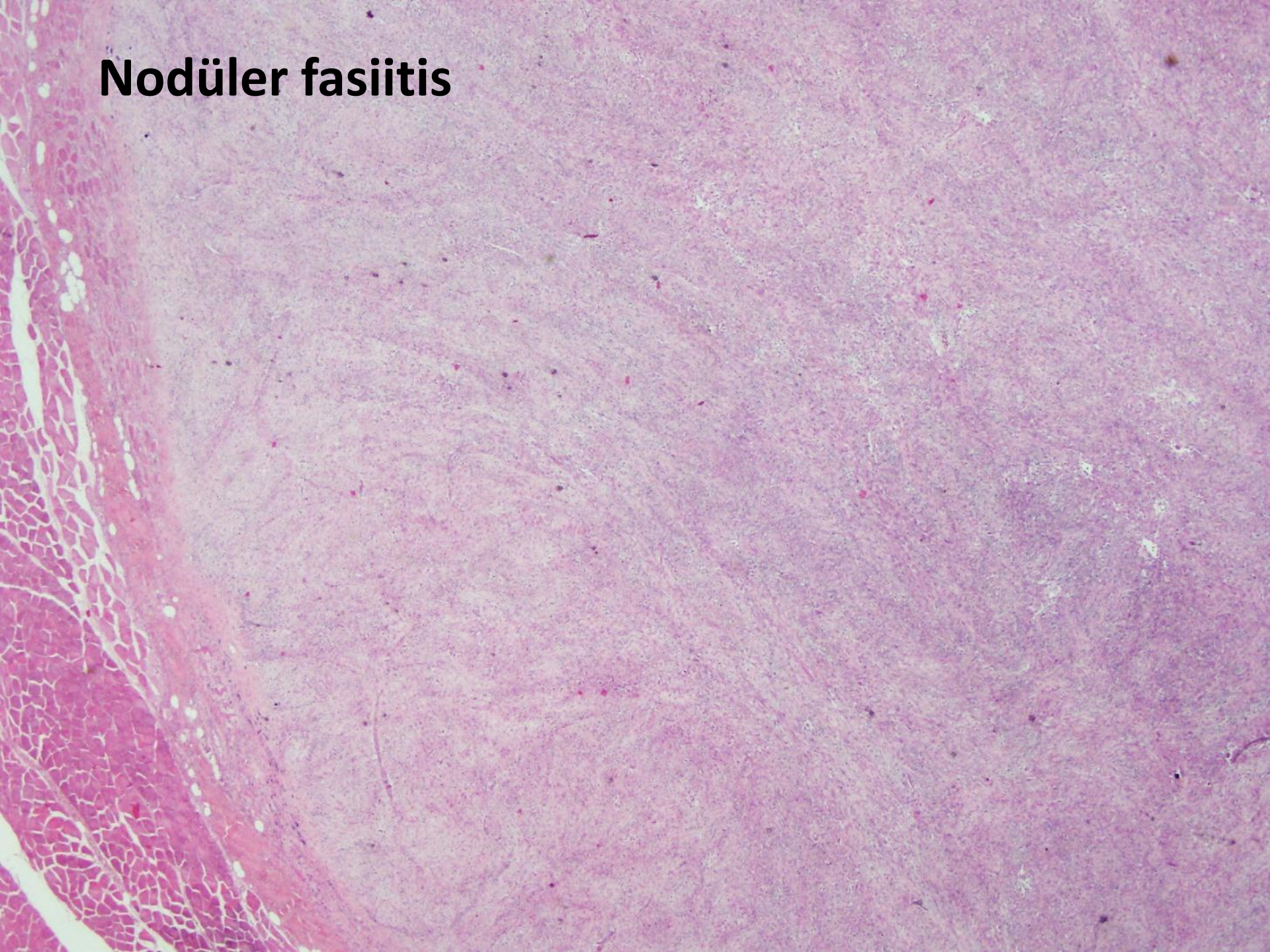
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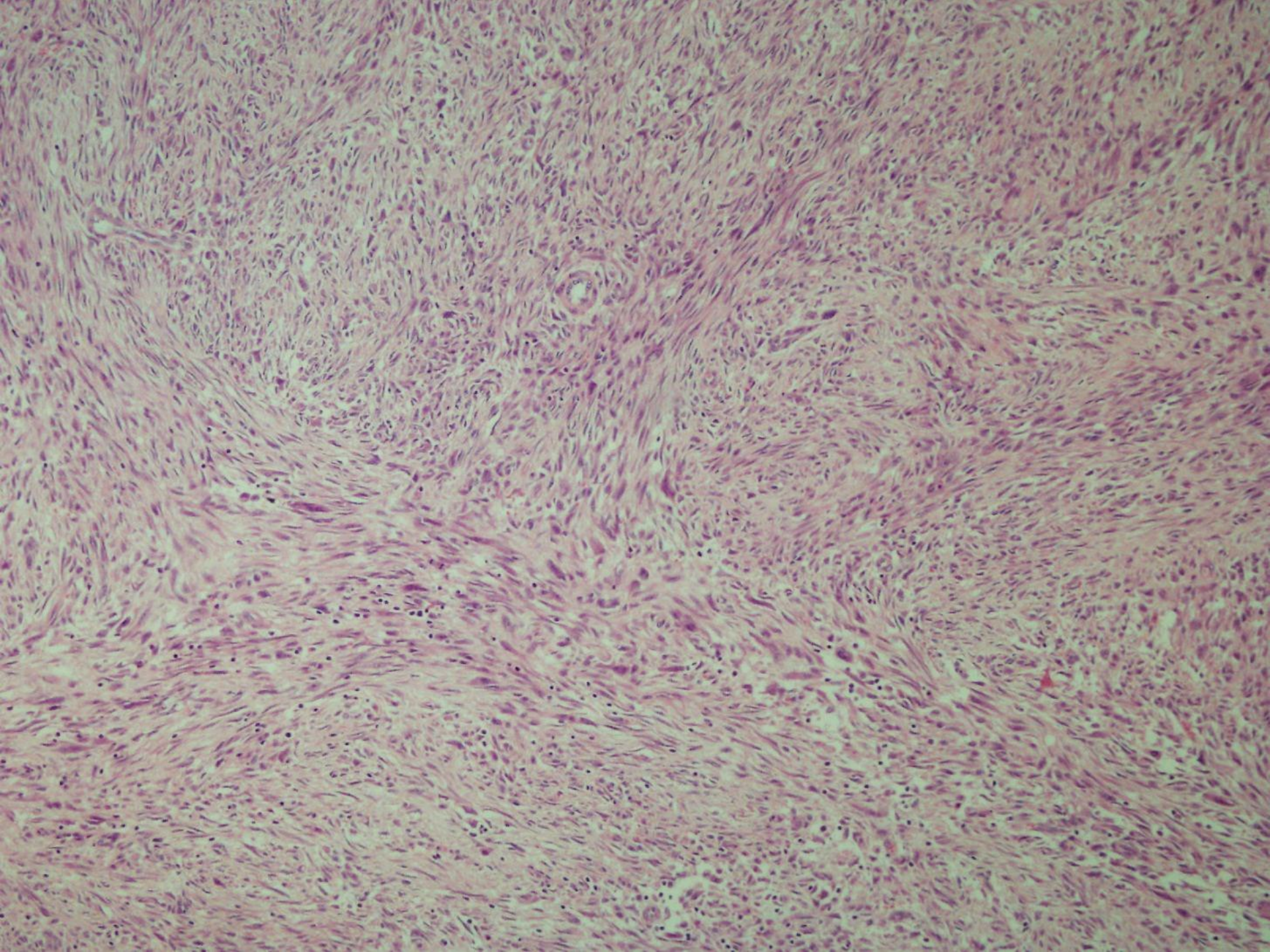


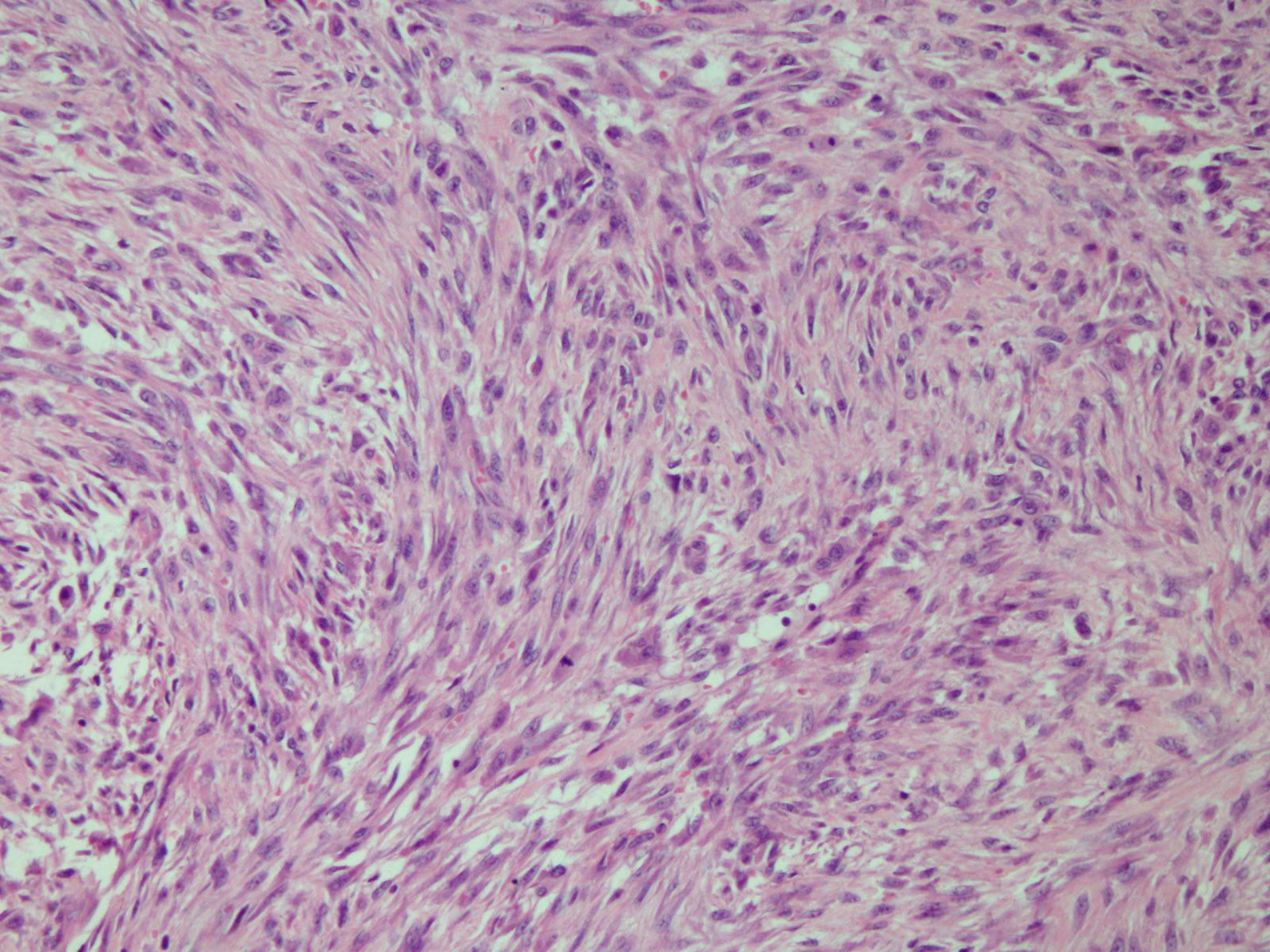
Leiyomyosarkom ayırıcı tanı

- Nodüler fasiitis
- Sellüler fibröz histiyositom
- Leiyomyom
- Sellüler Schwannom
- Ekstra gastrointestinal stromal tümör
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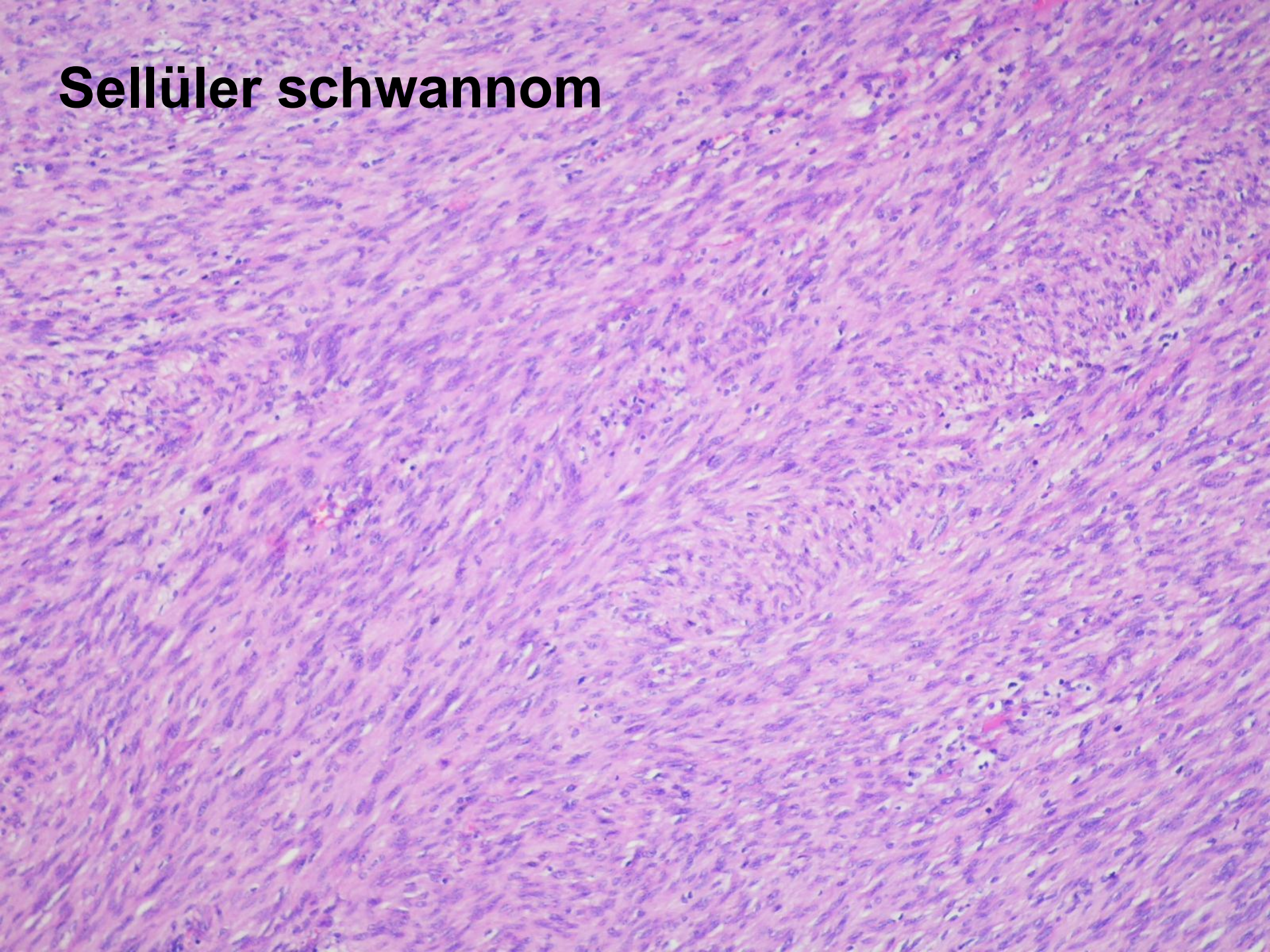
Nodüler fasiitis

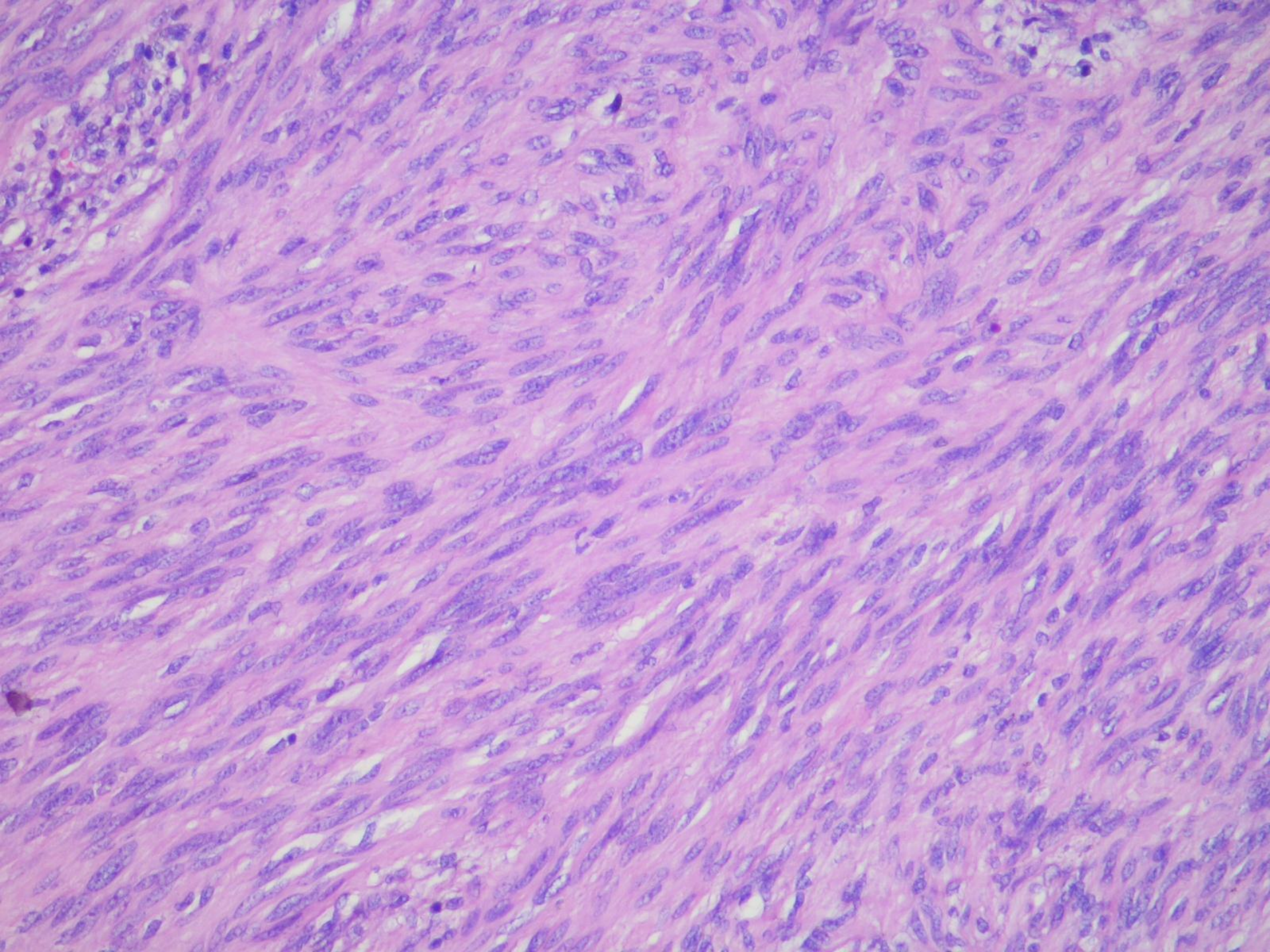


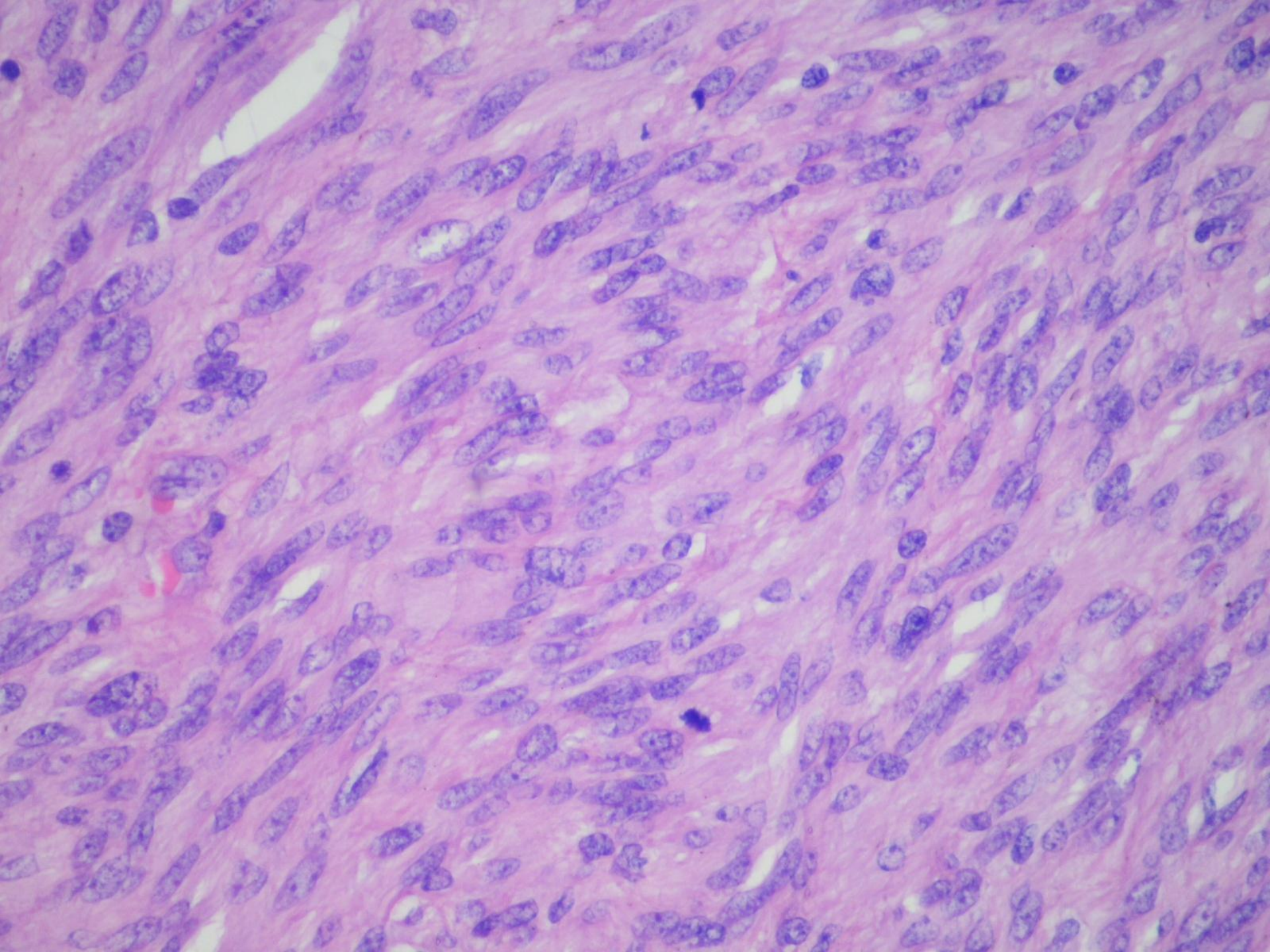




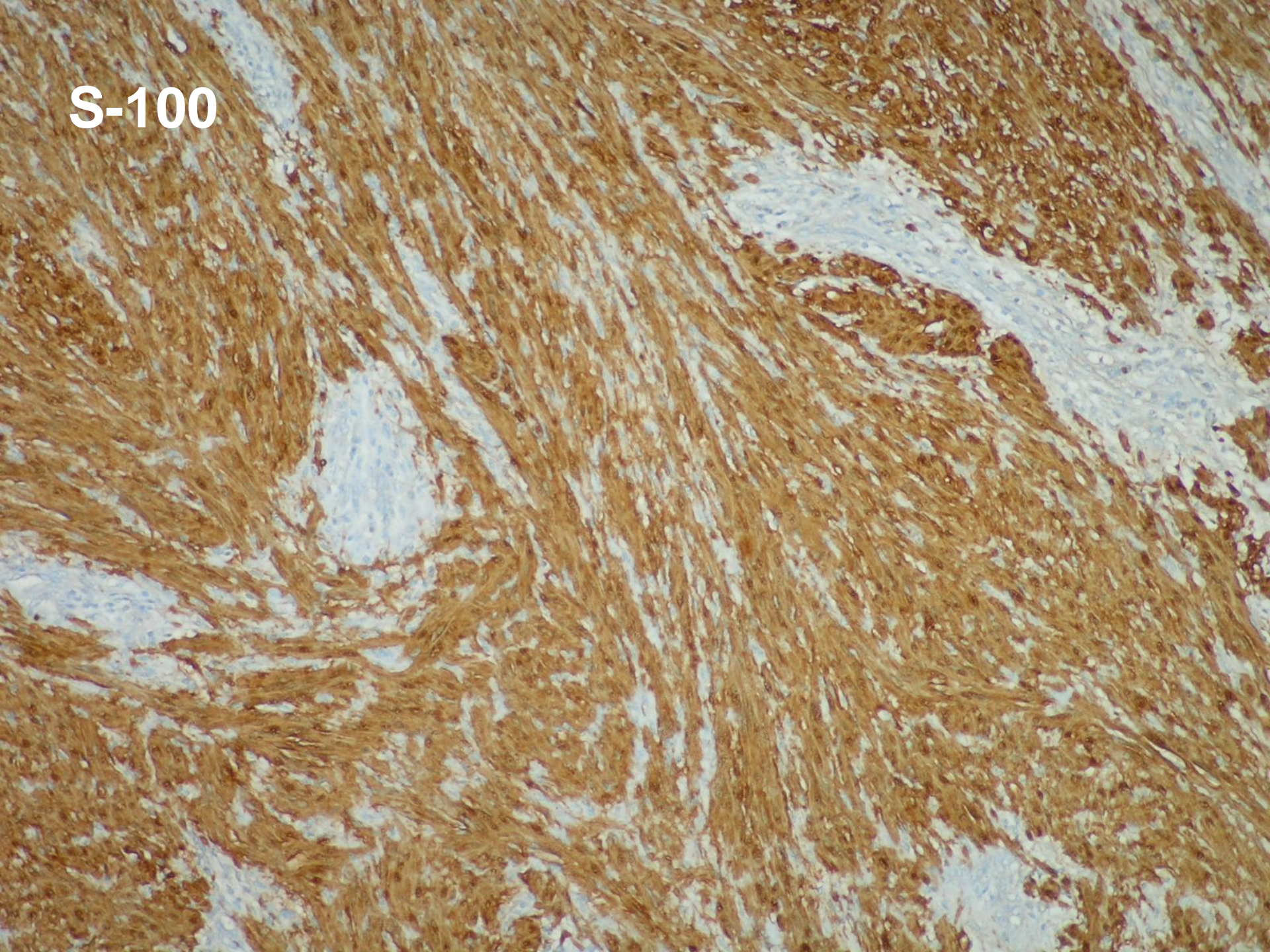
Sellüler schwannom



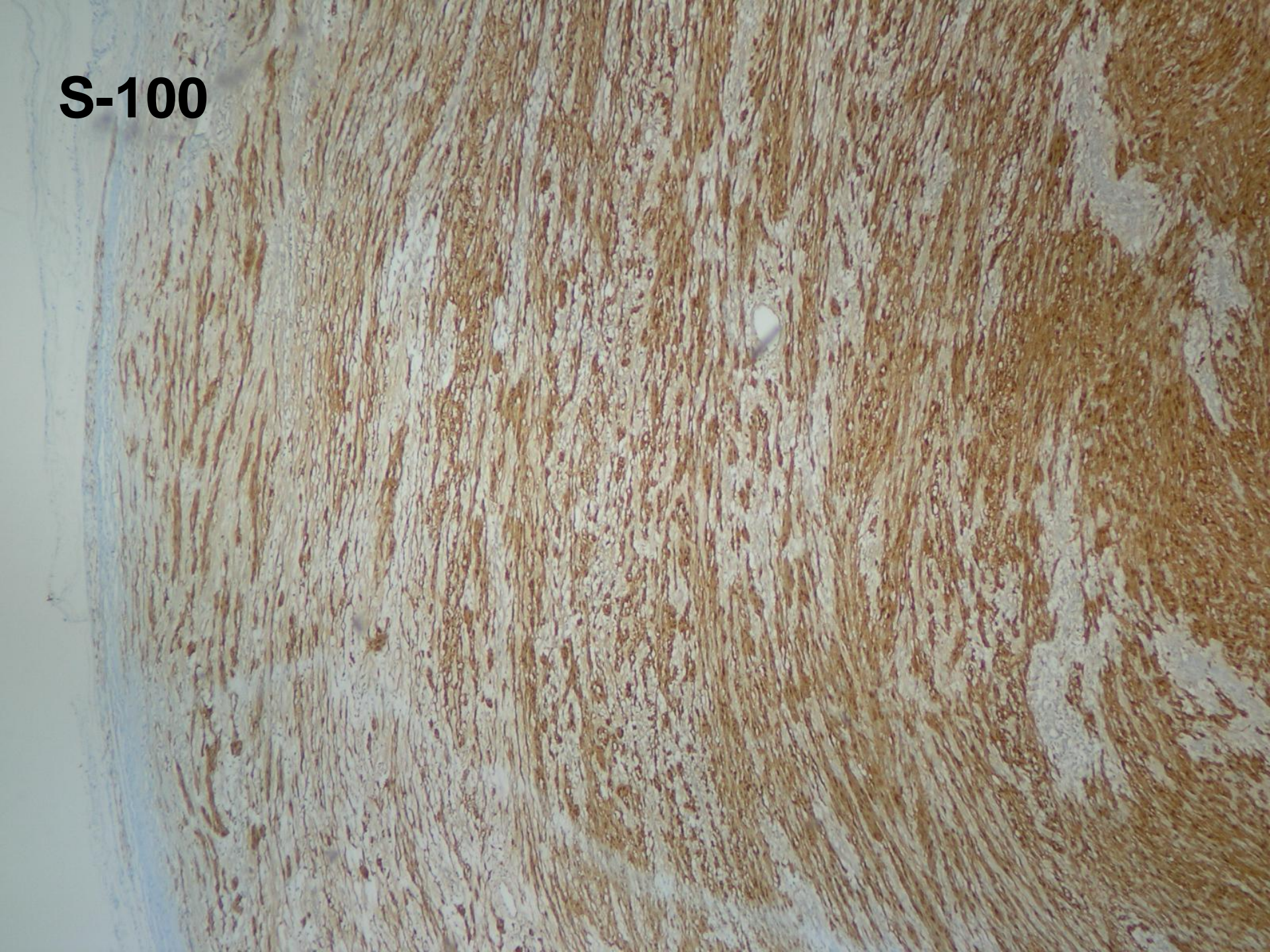




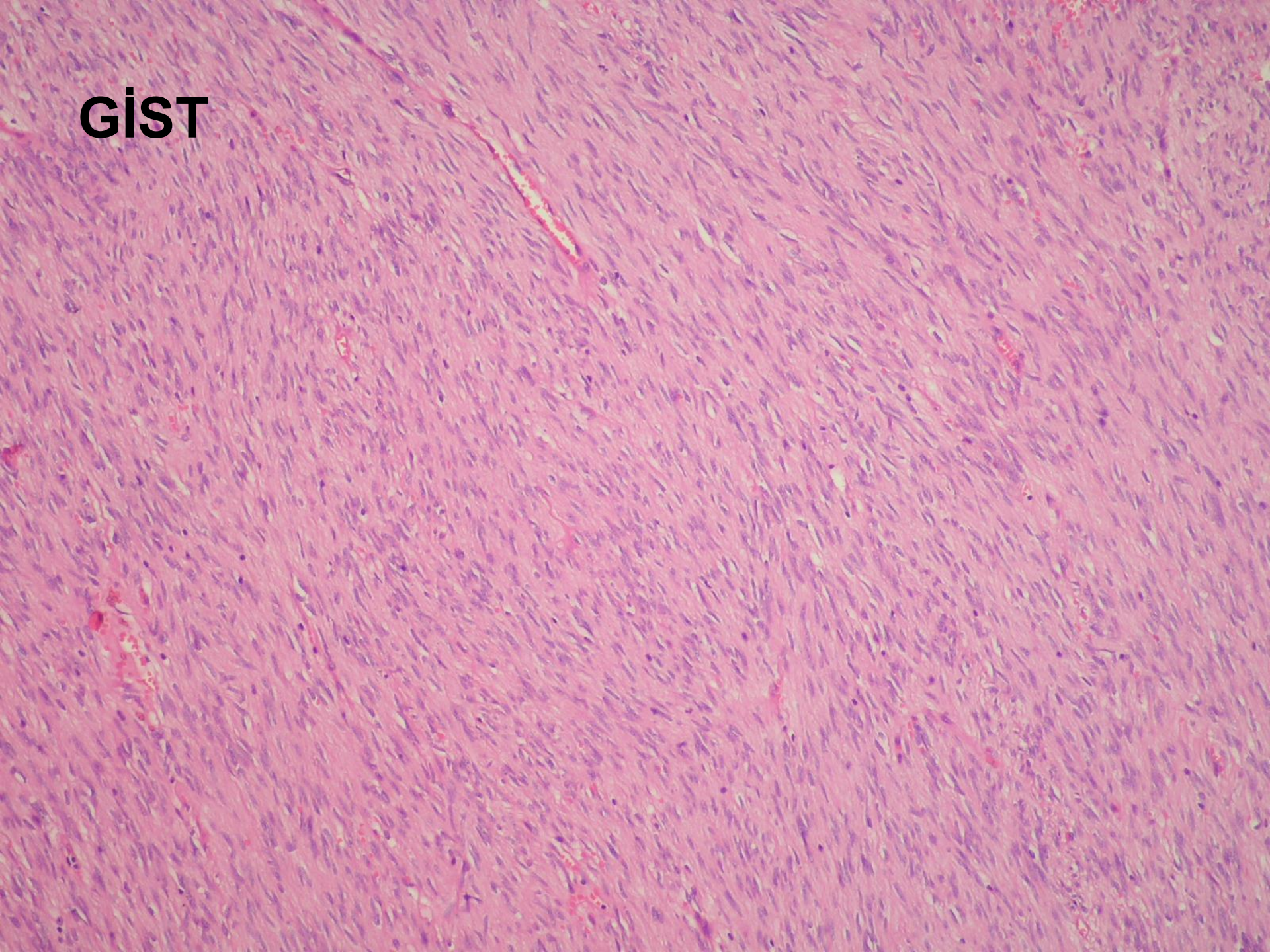
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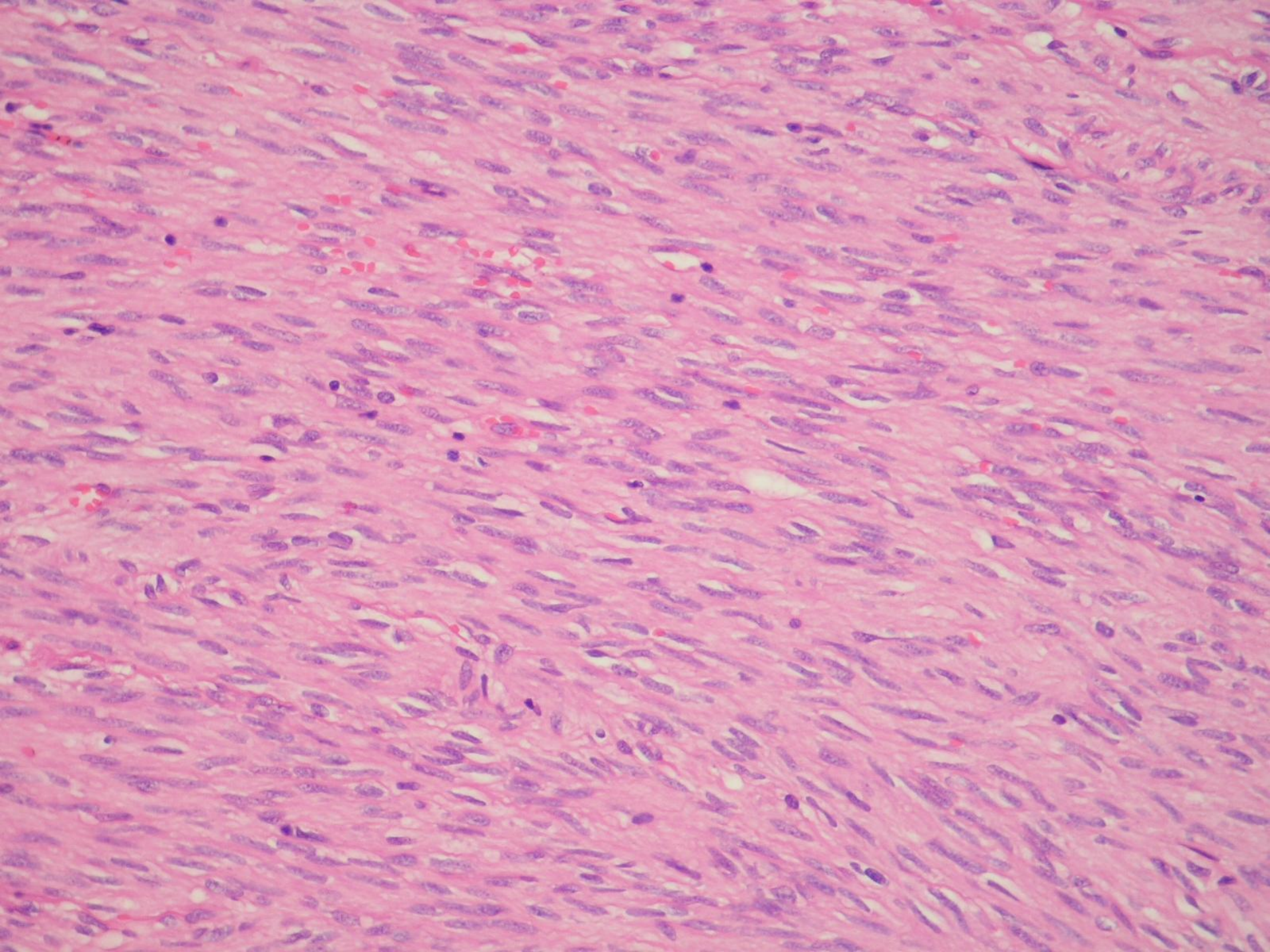


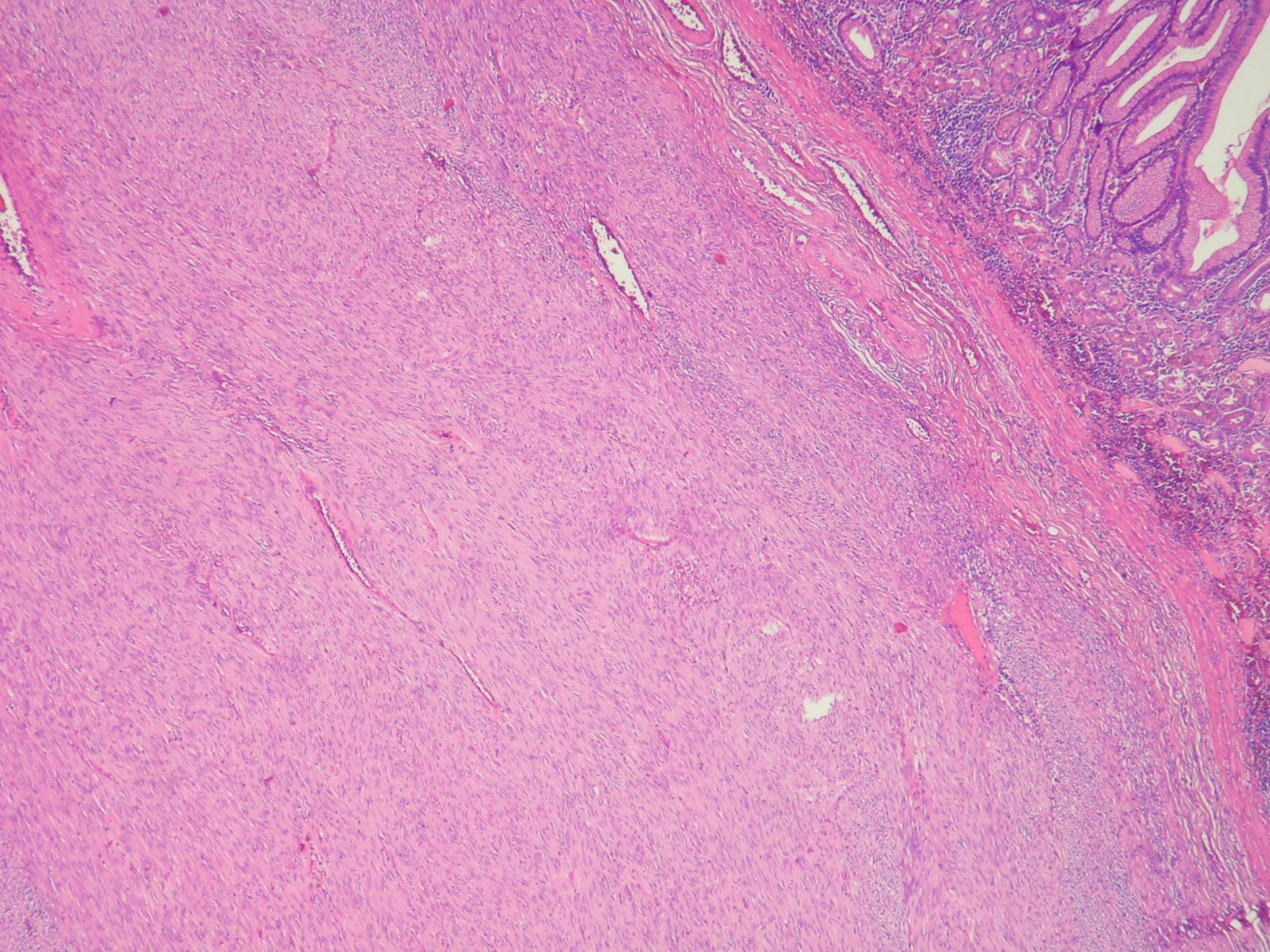
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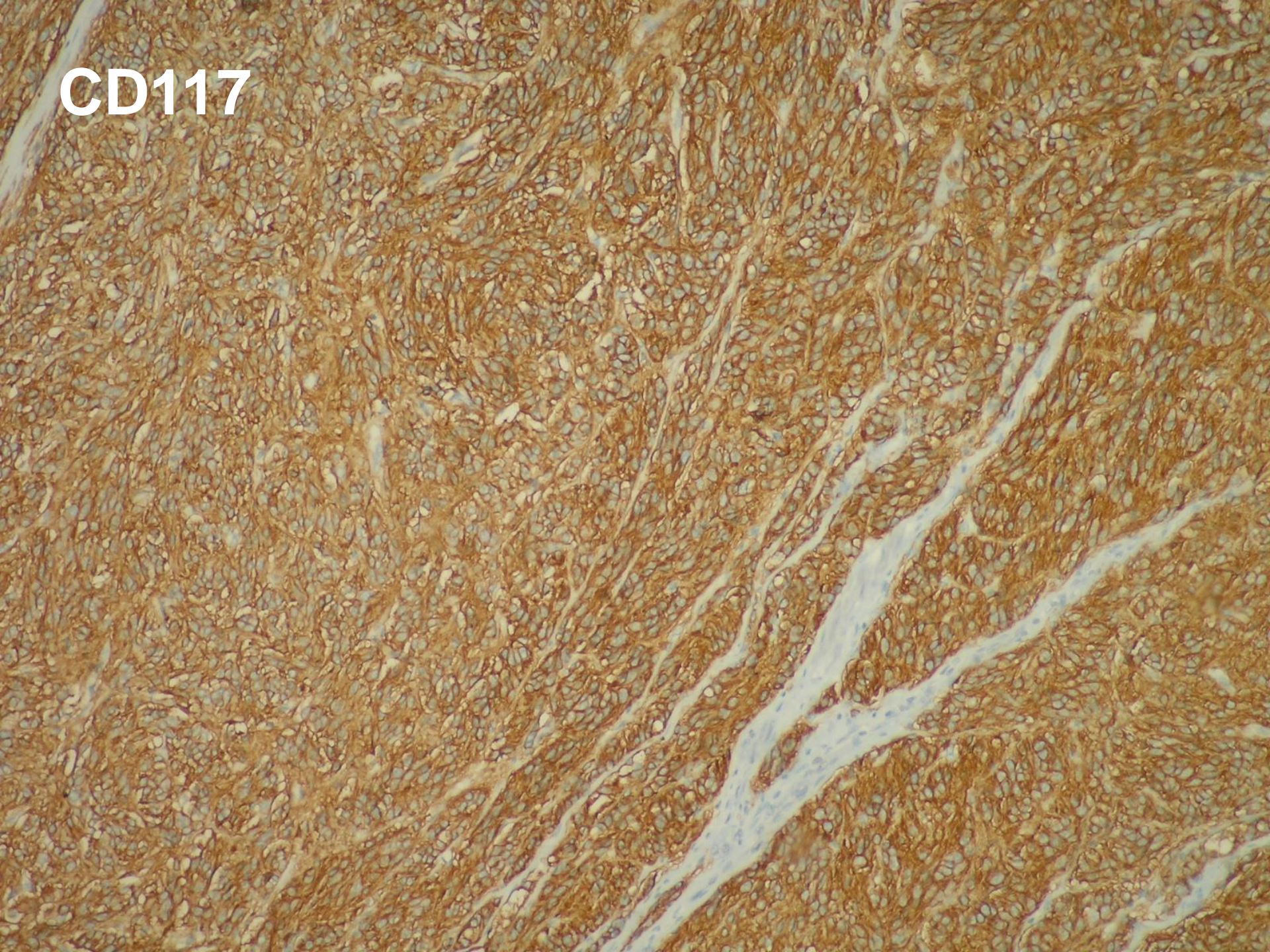
GIST

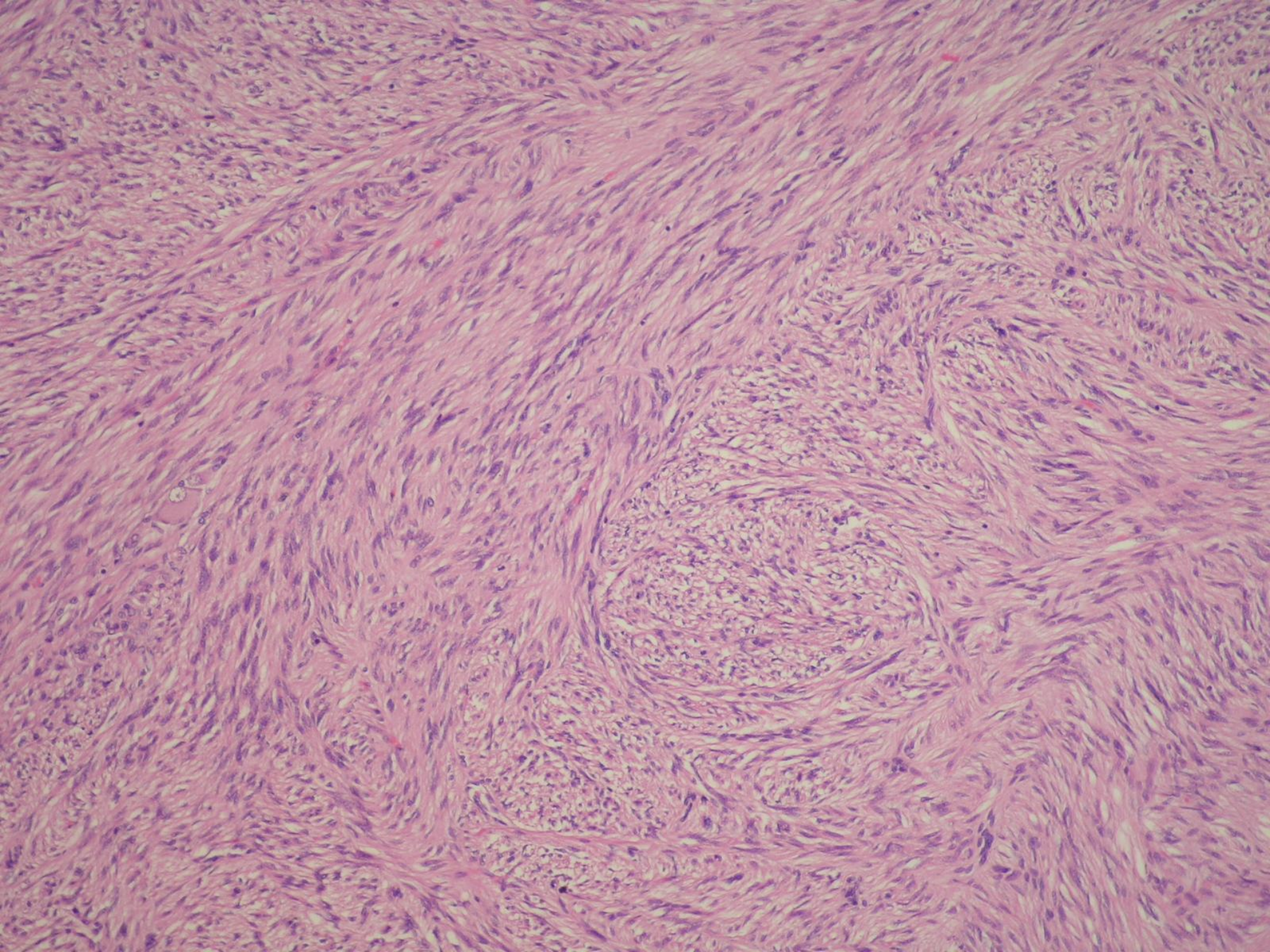


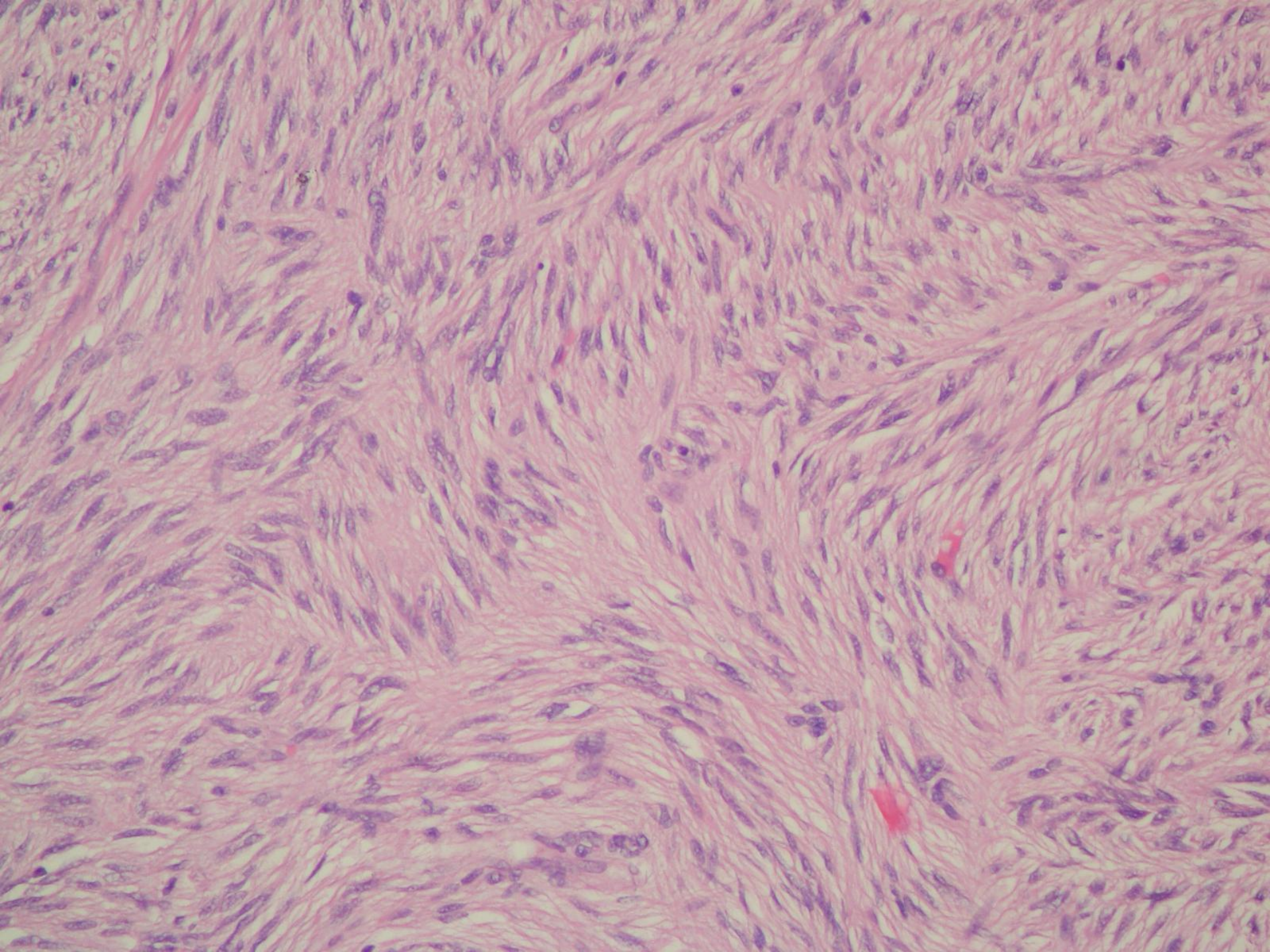


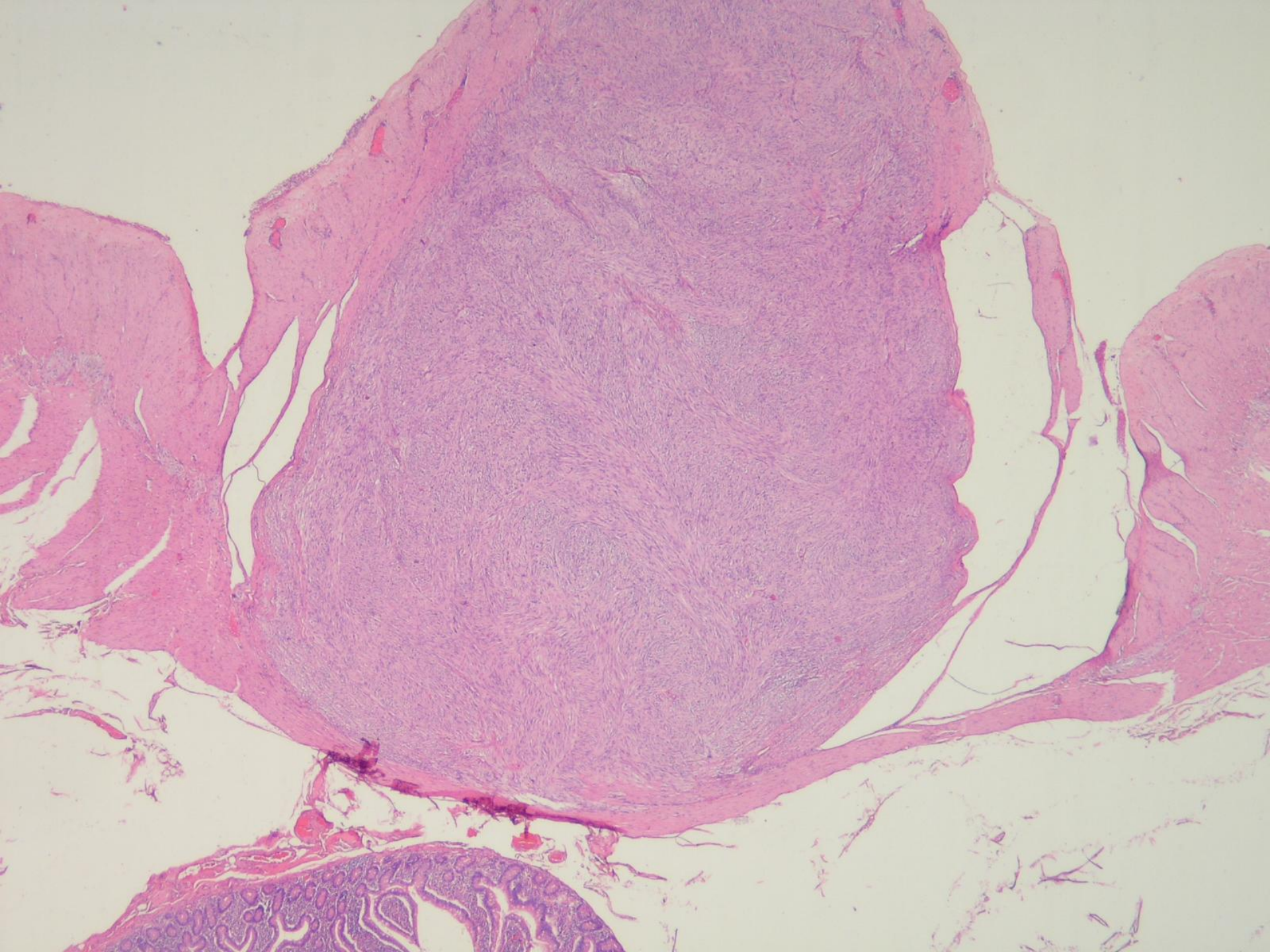


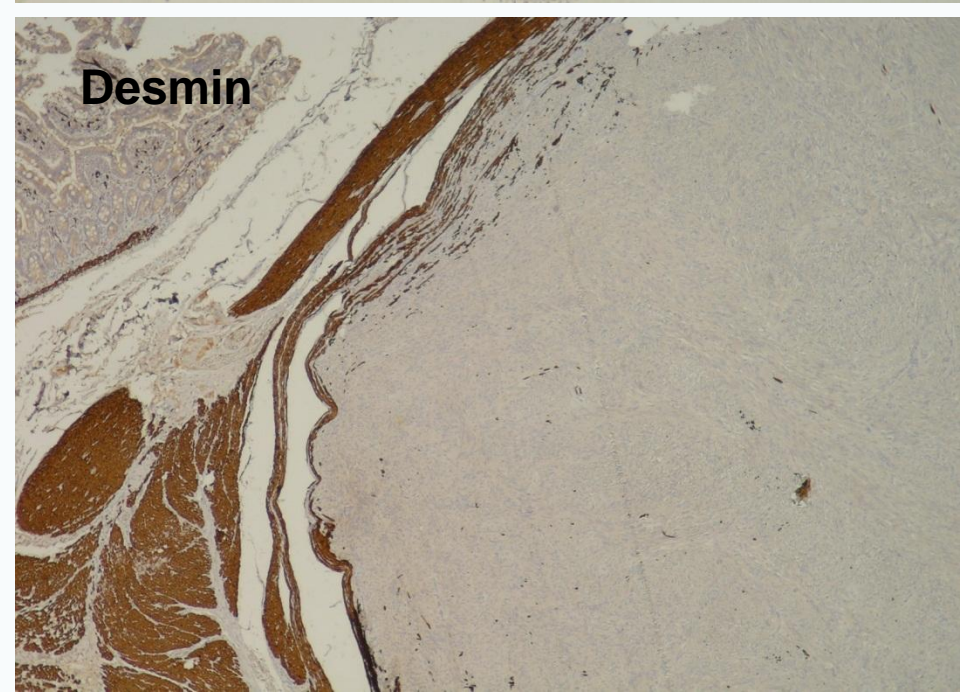
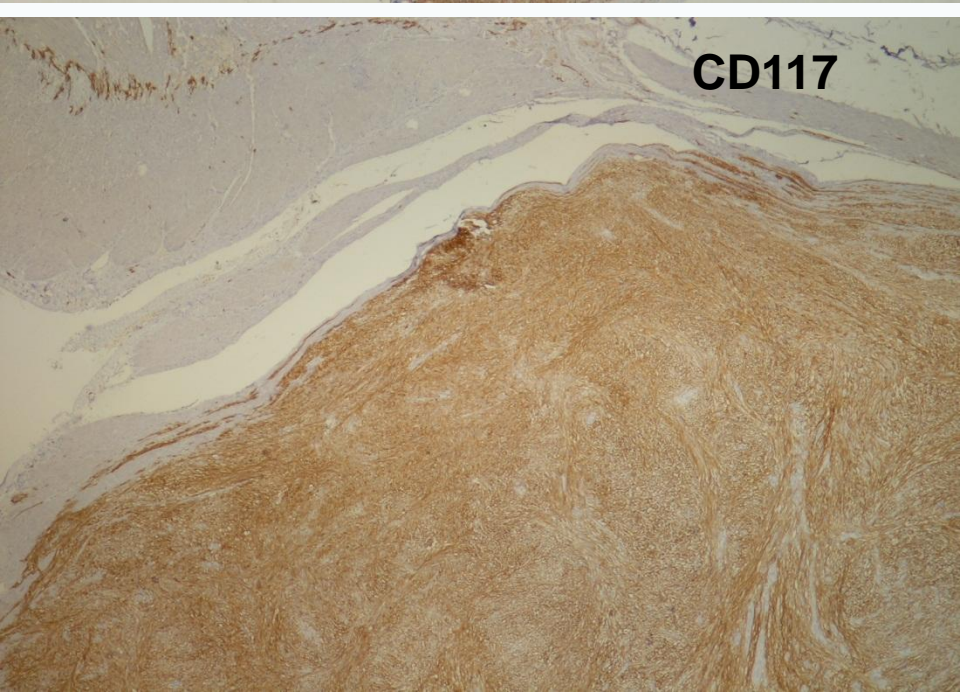
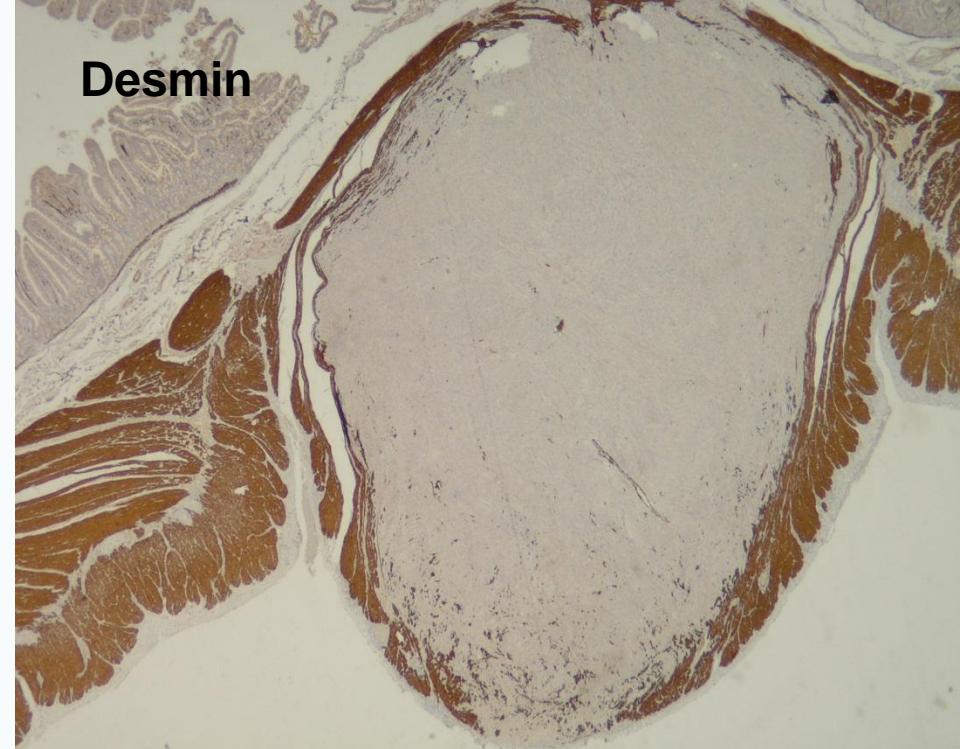
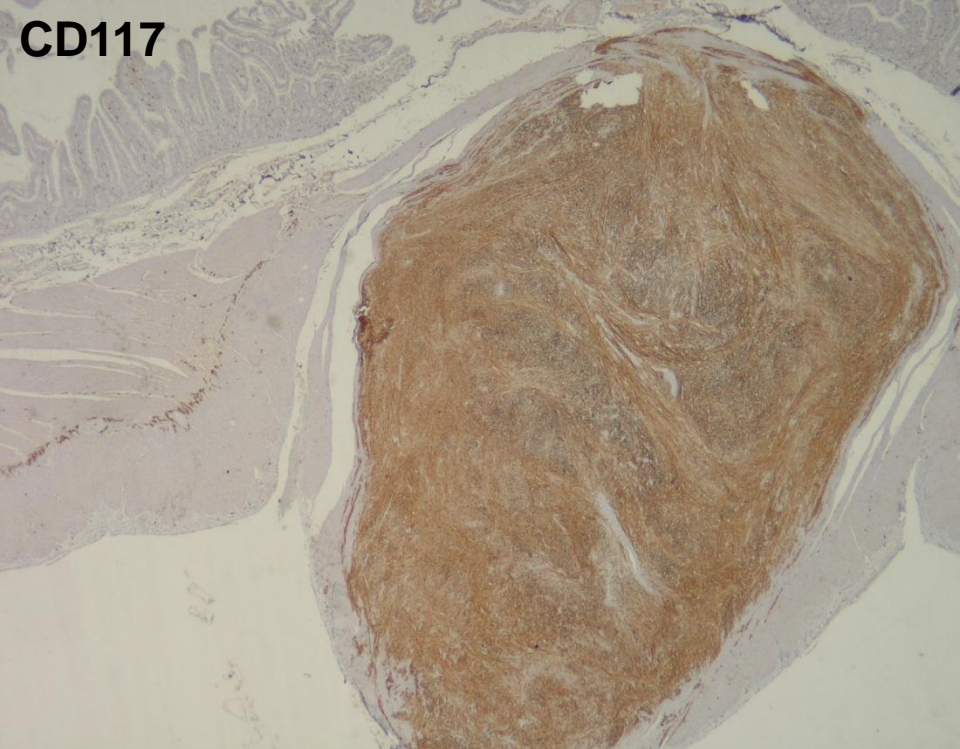
CD117



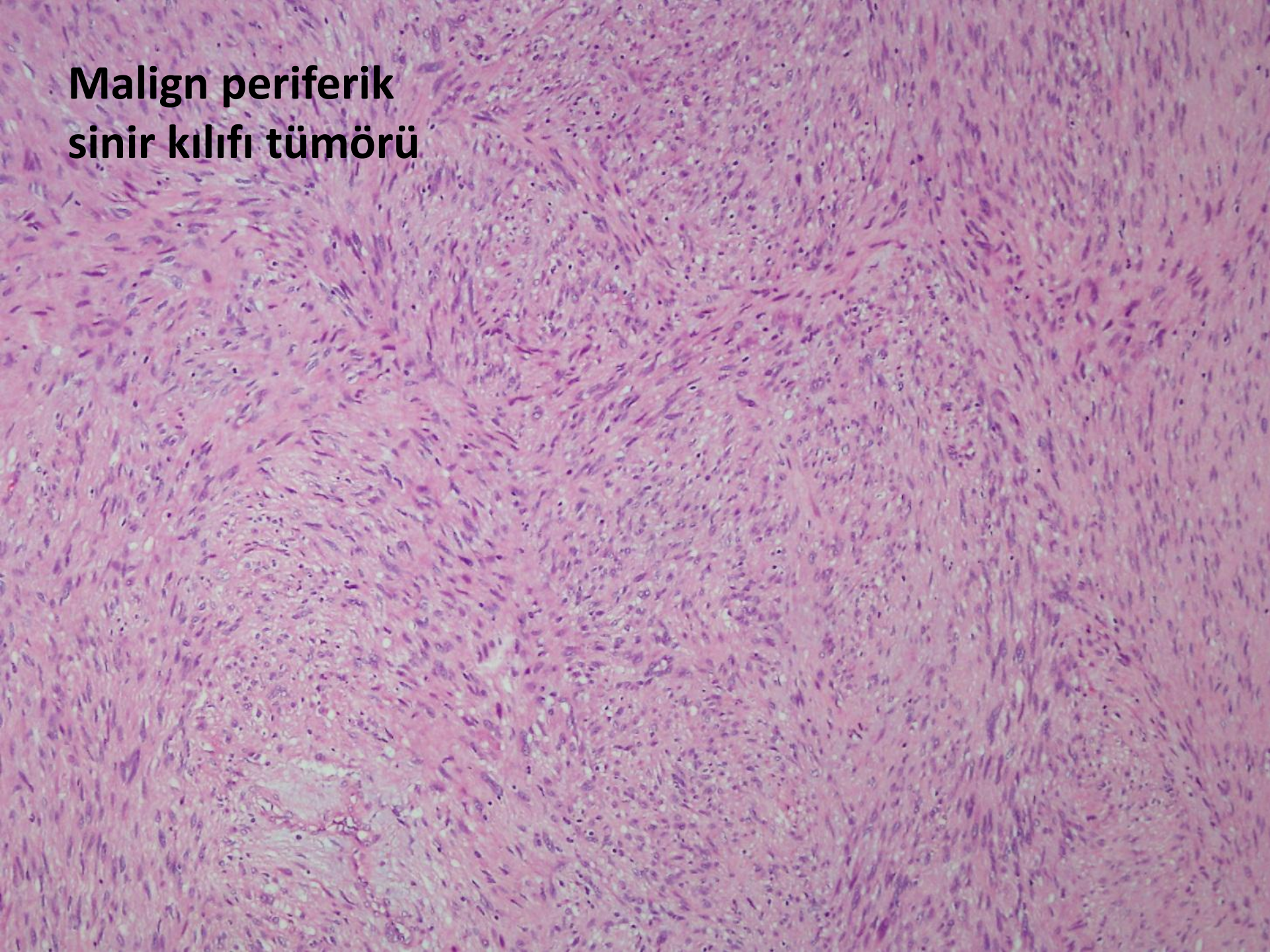


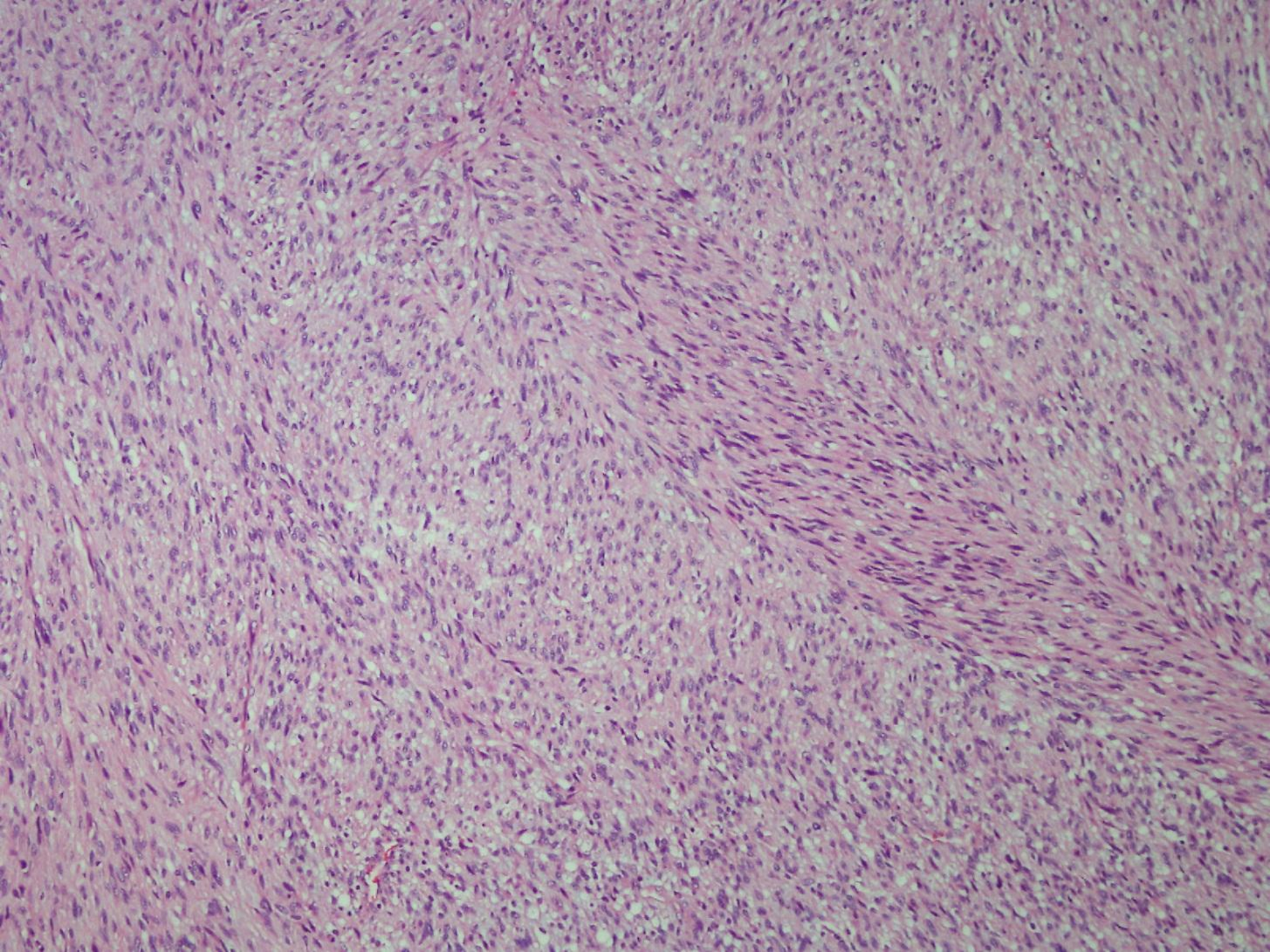


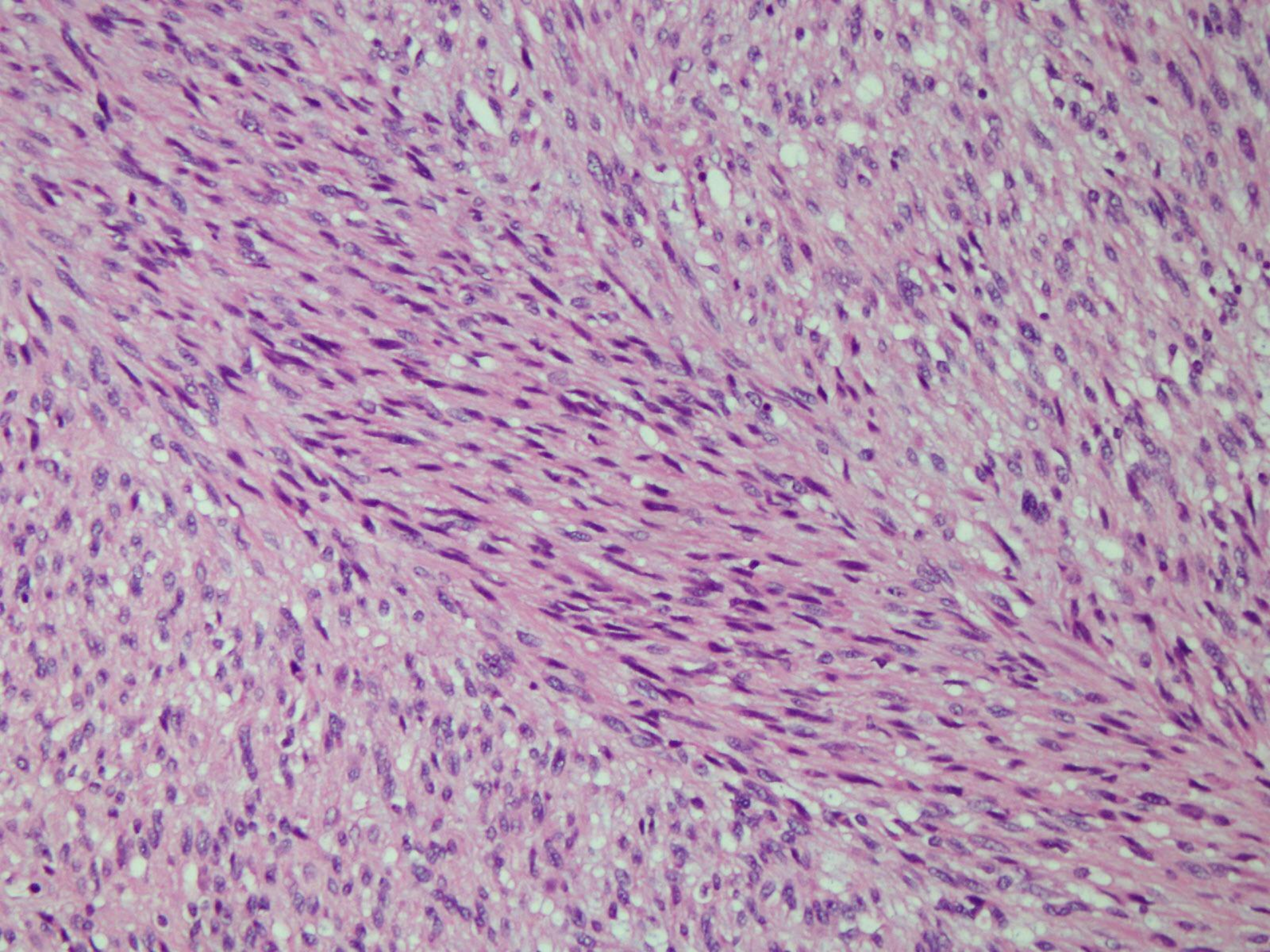


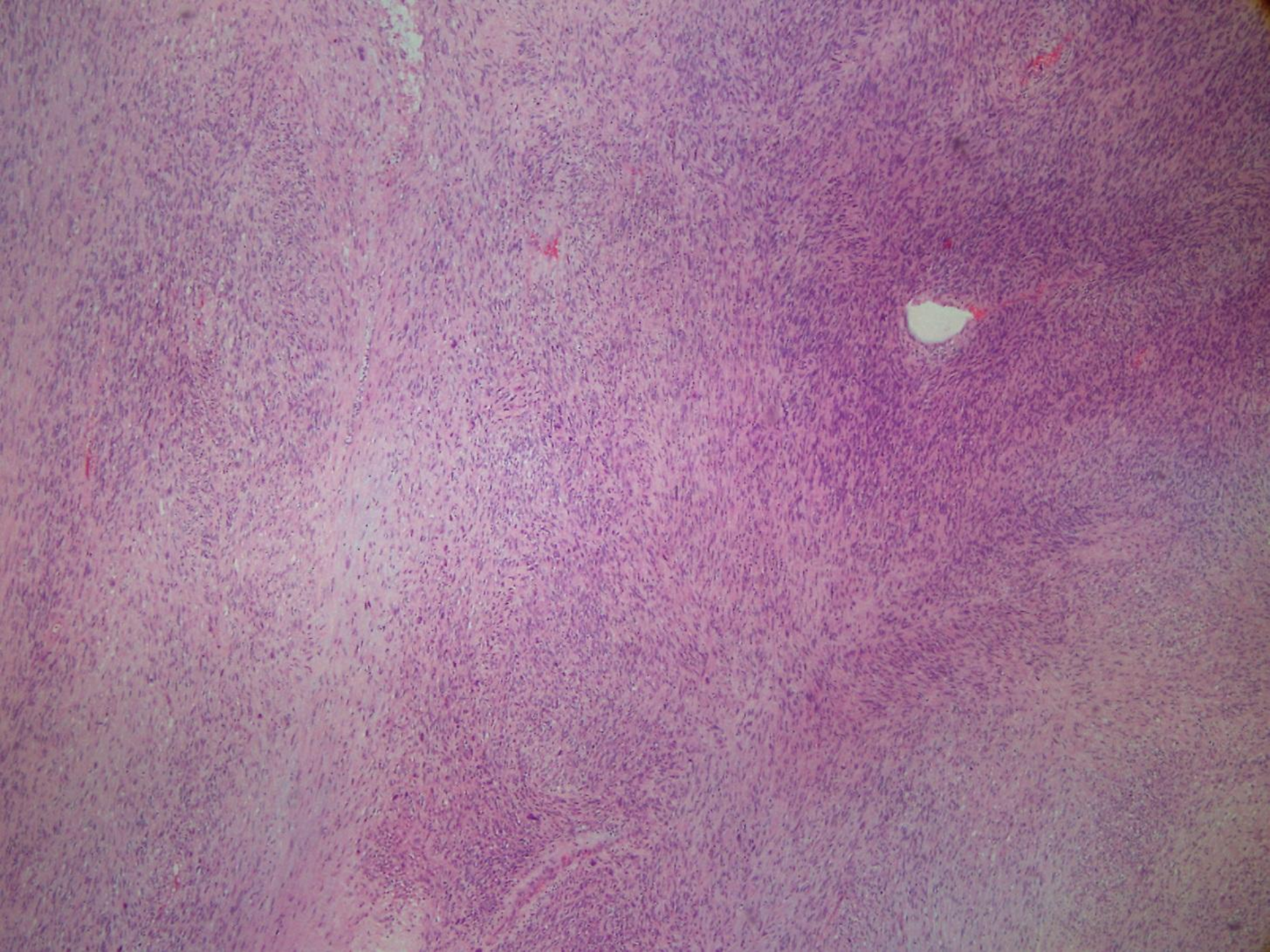


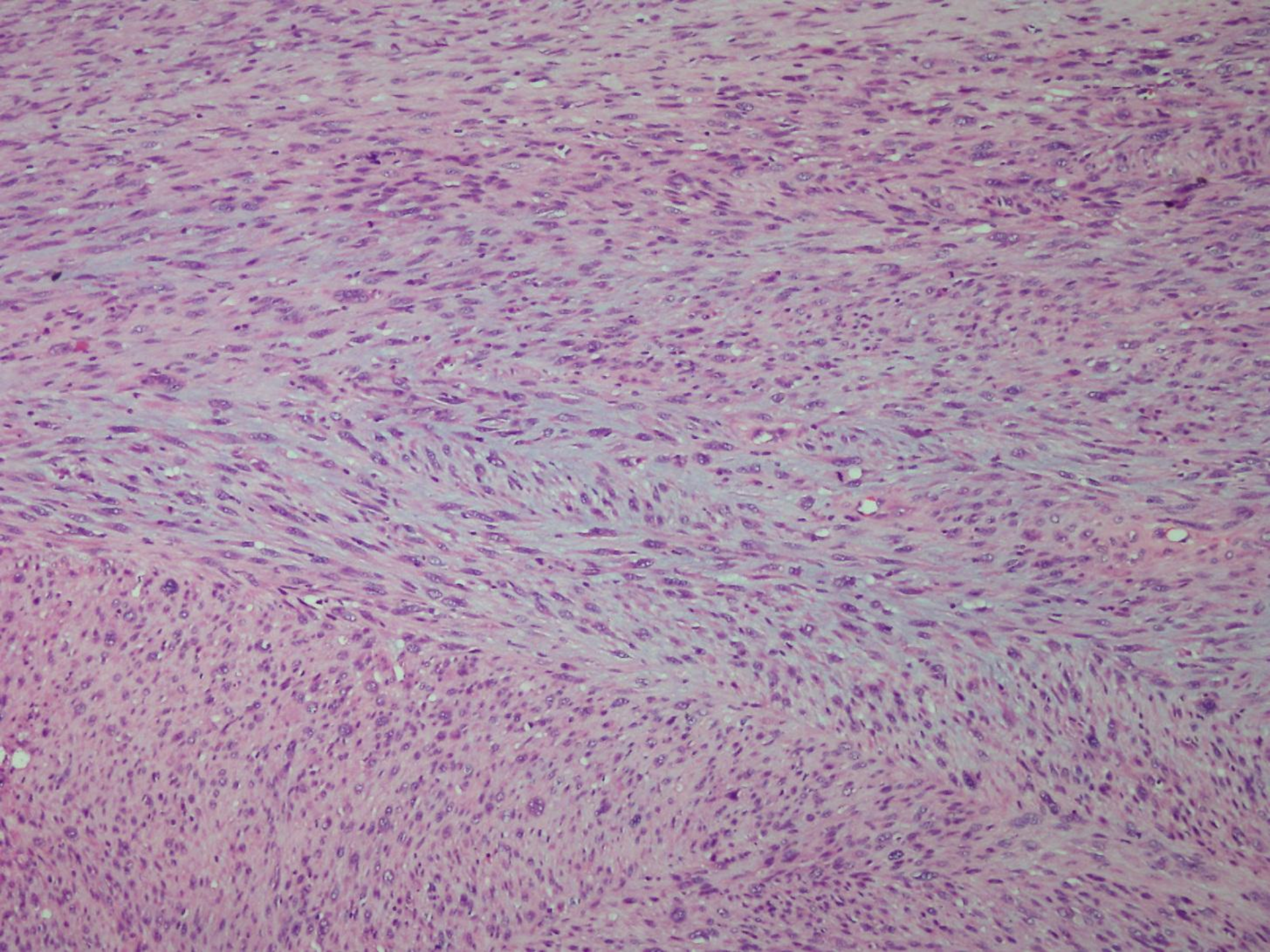
**Malign periferik
sinir kılıfı tümörü**

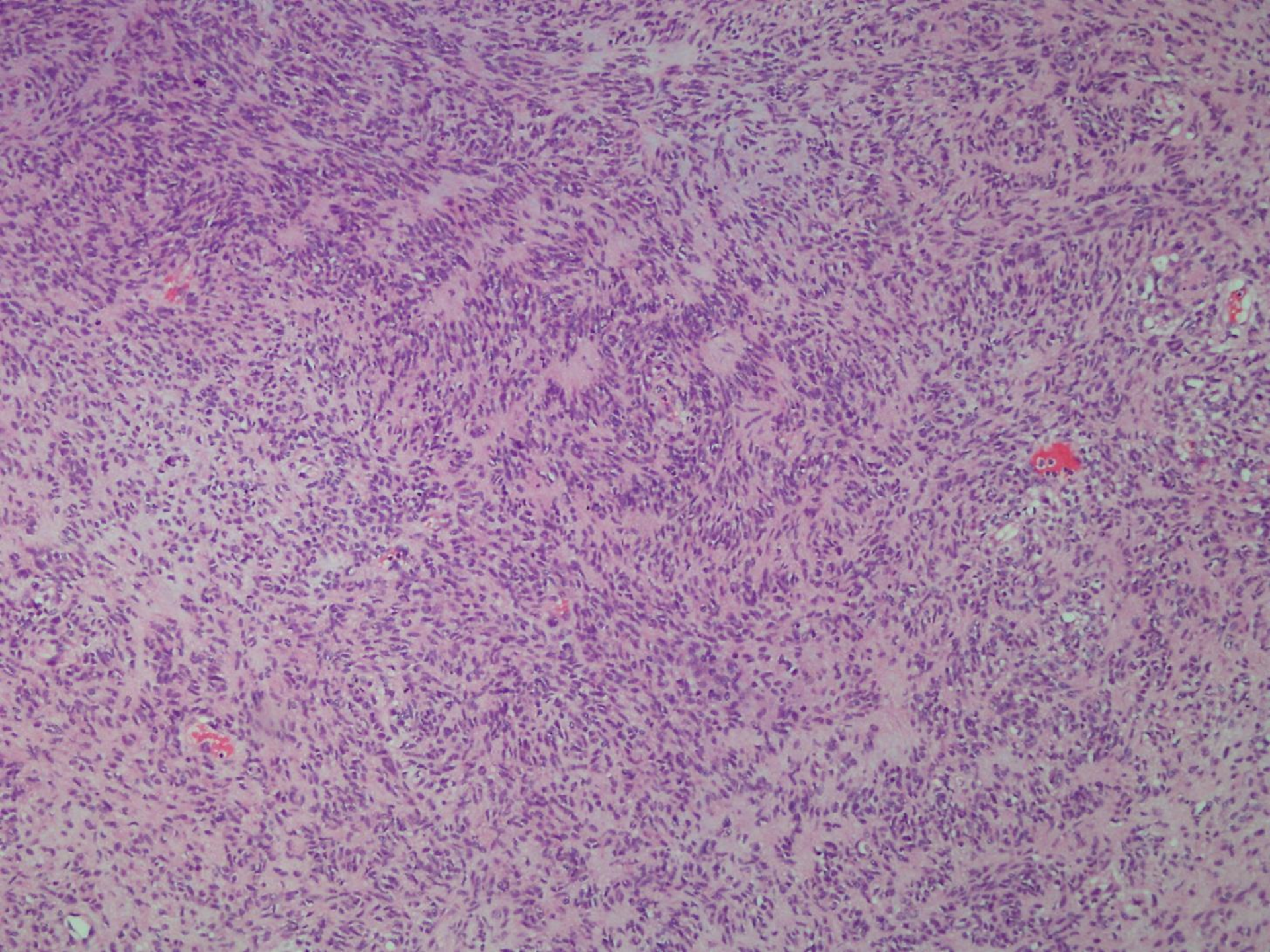


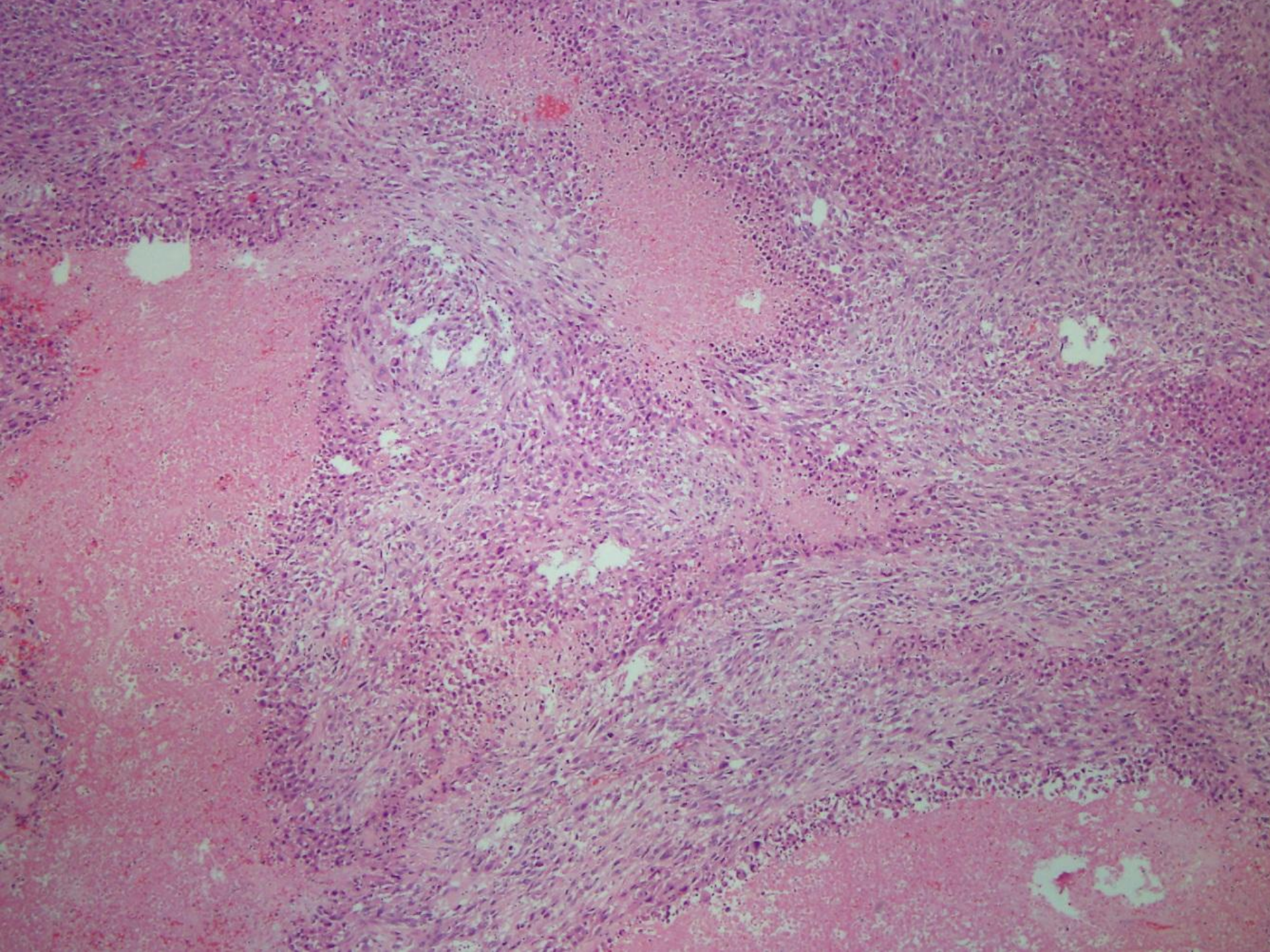




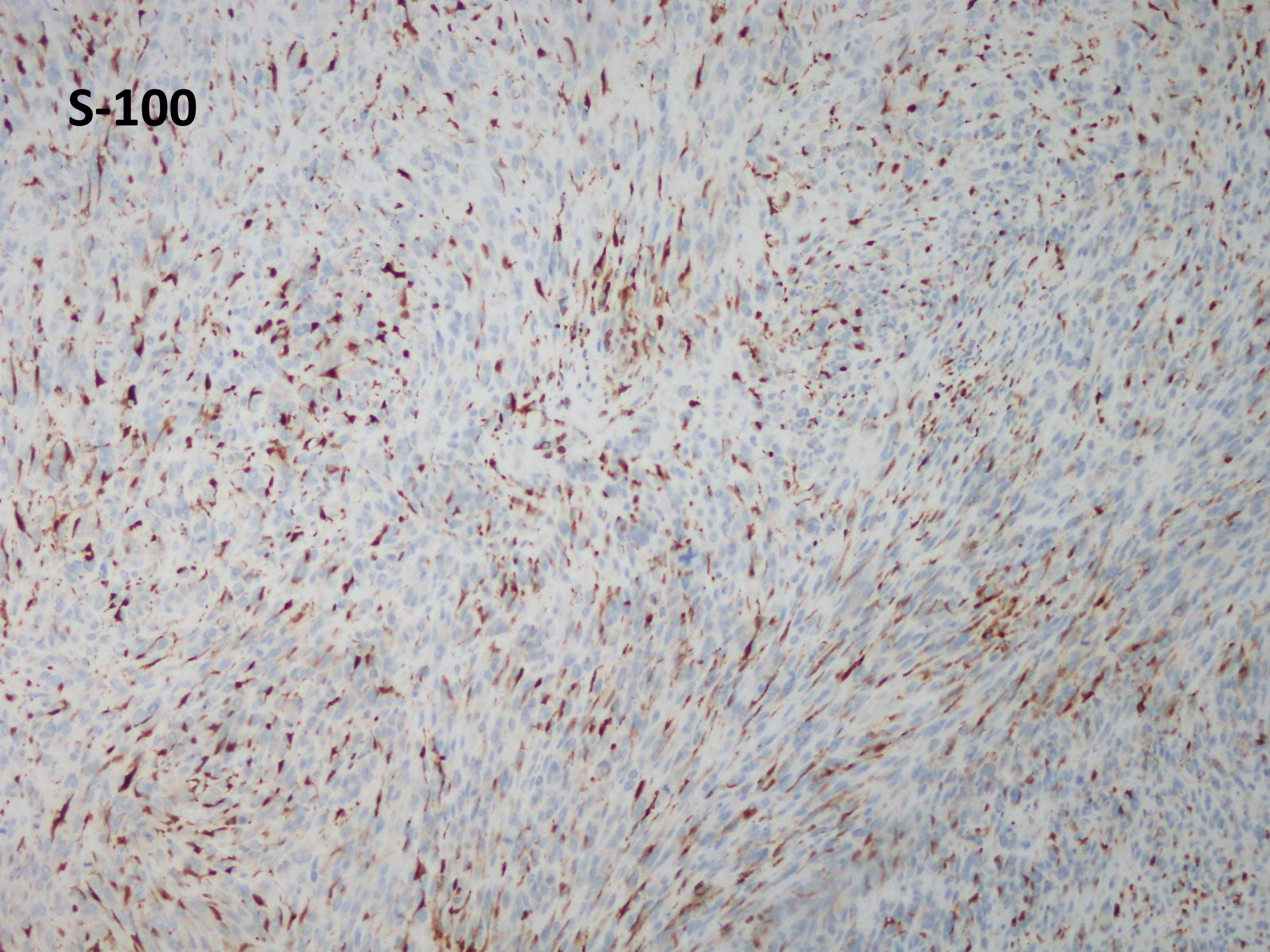




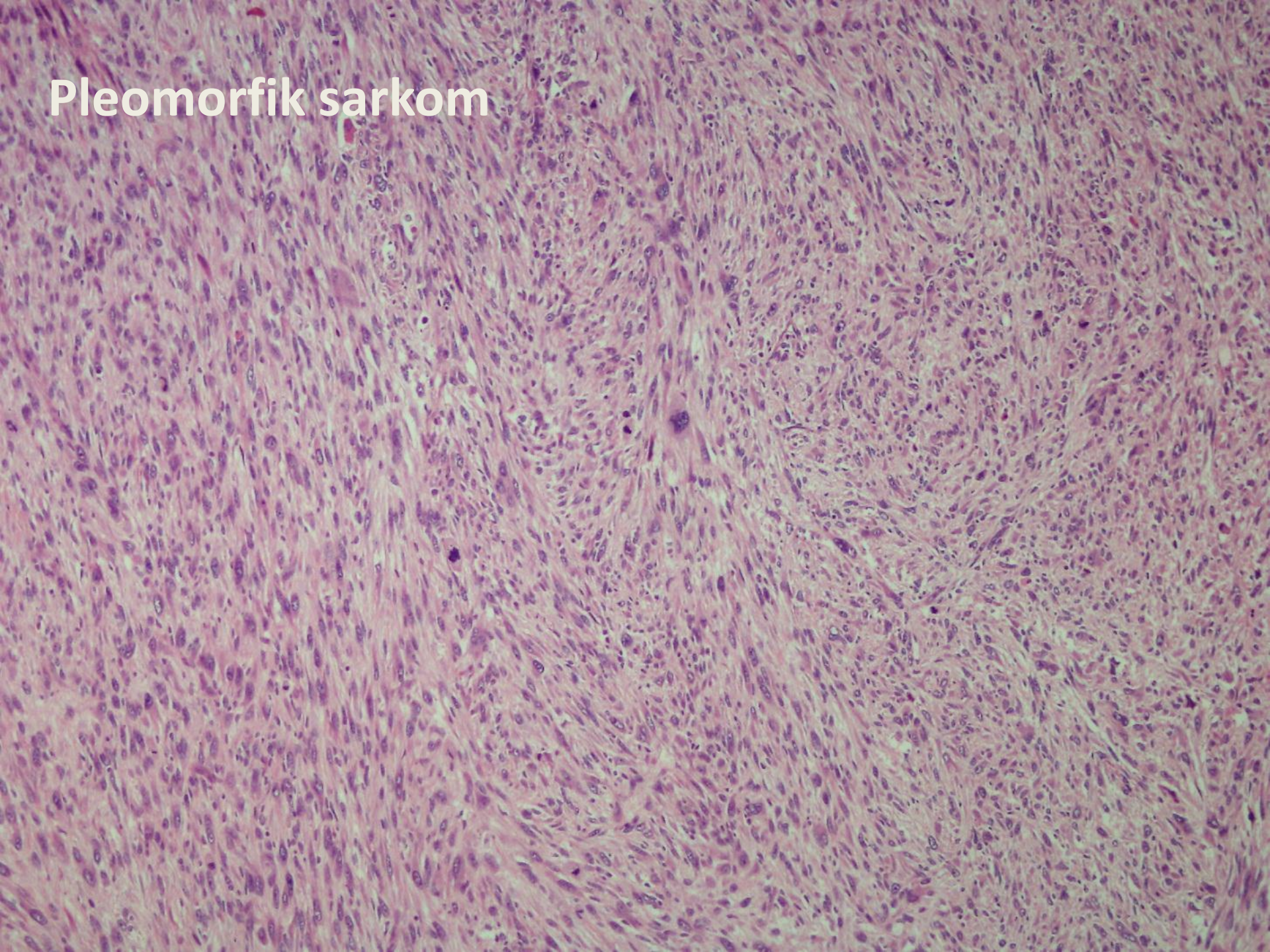


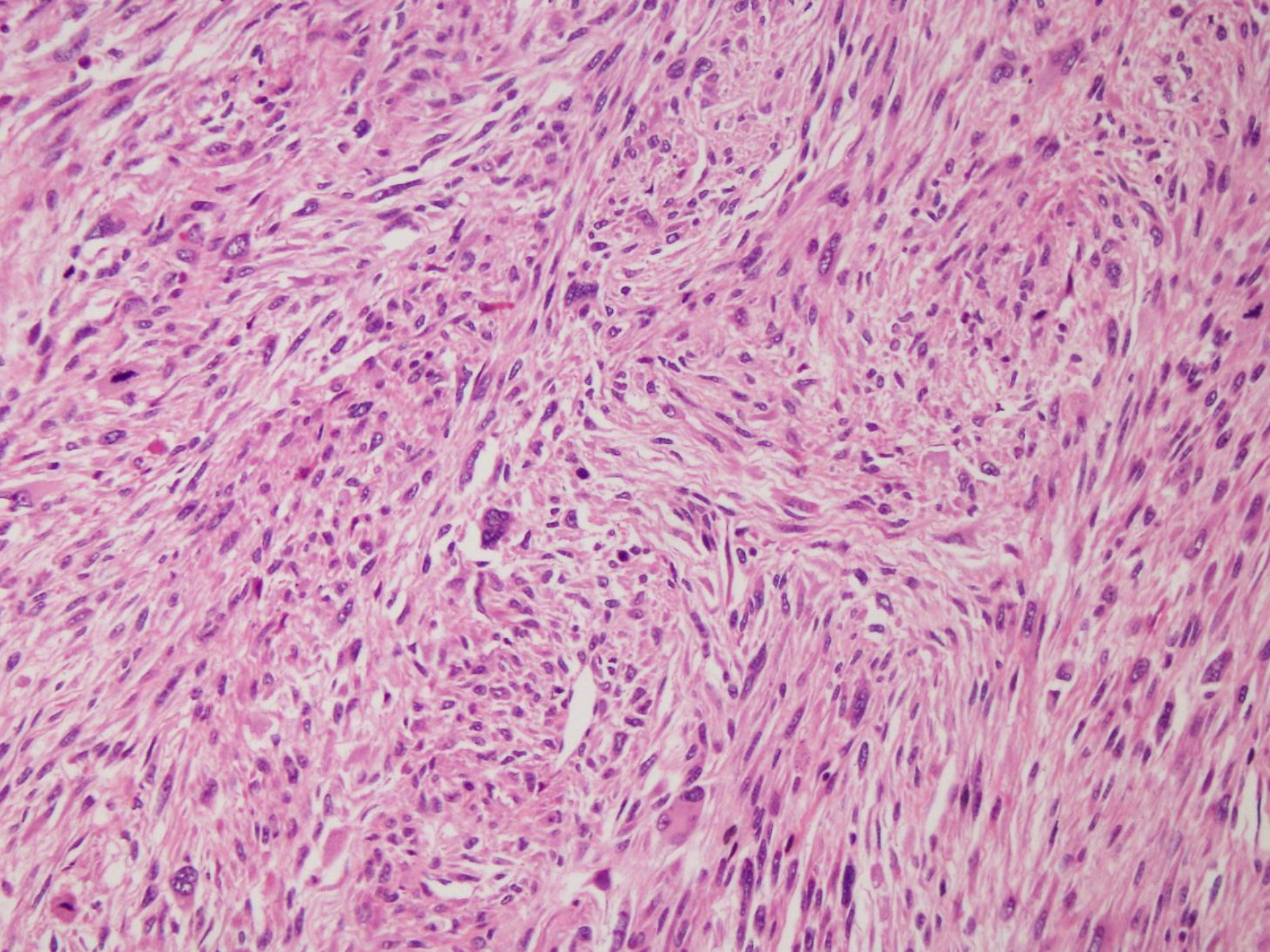


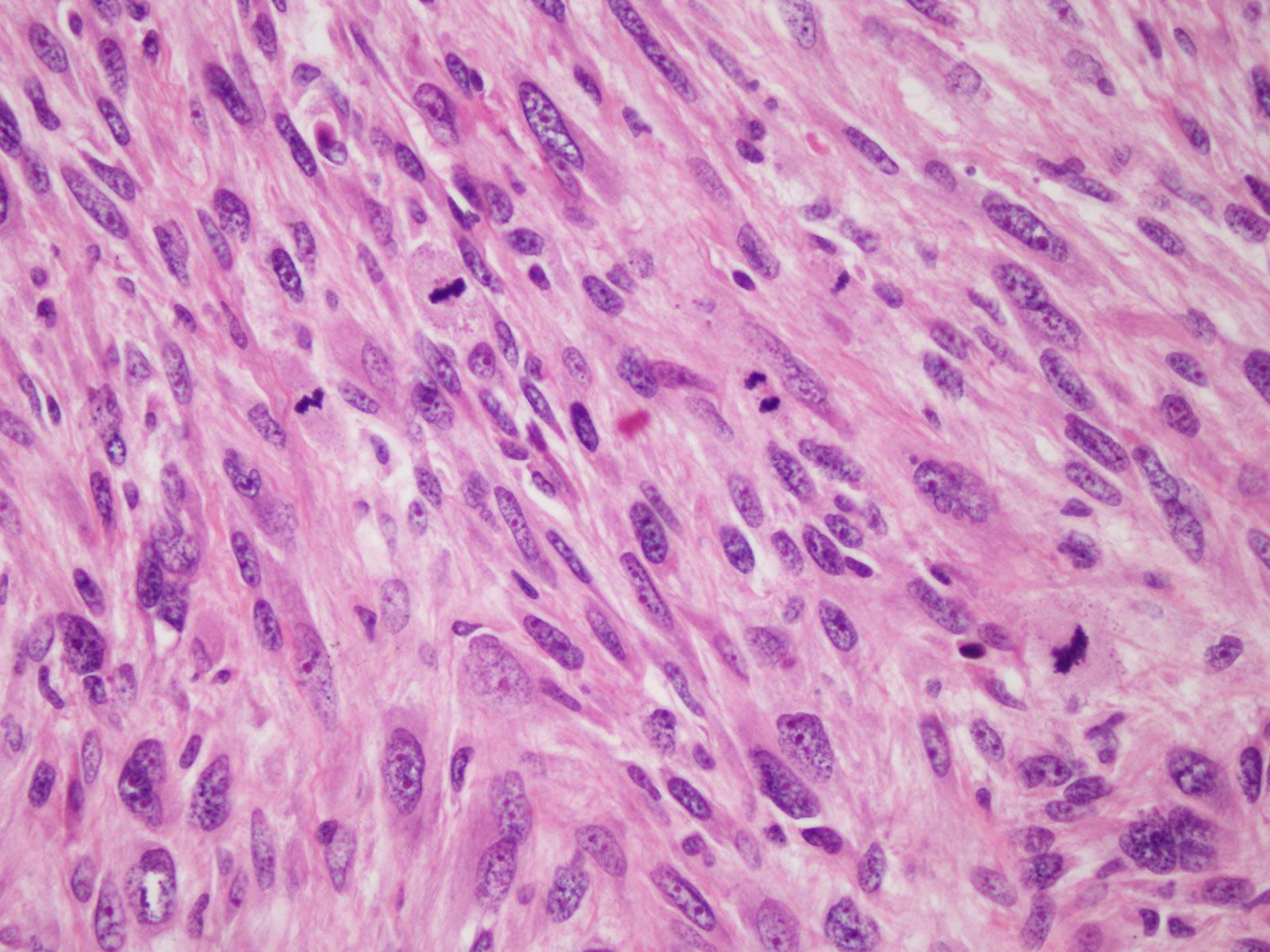
S-100



Pleomorfik sarkom





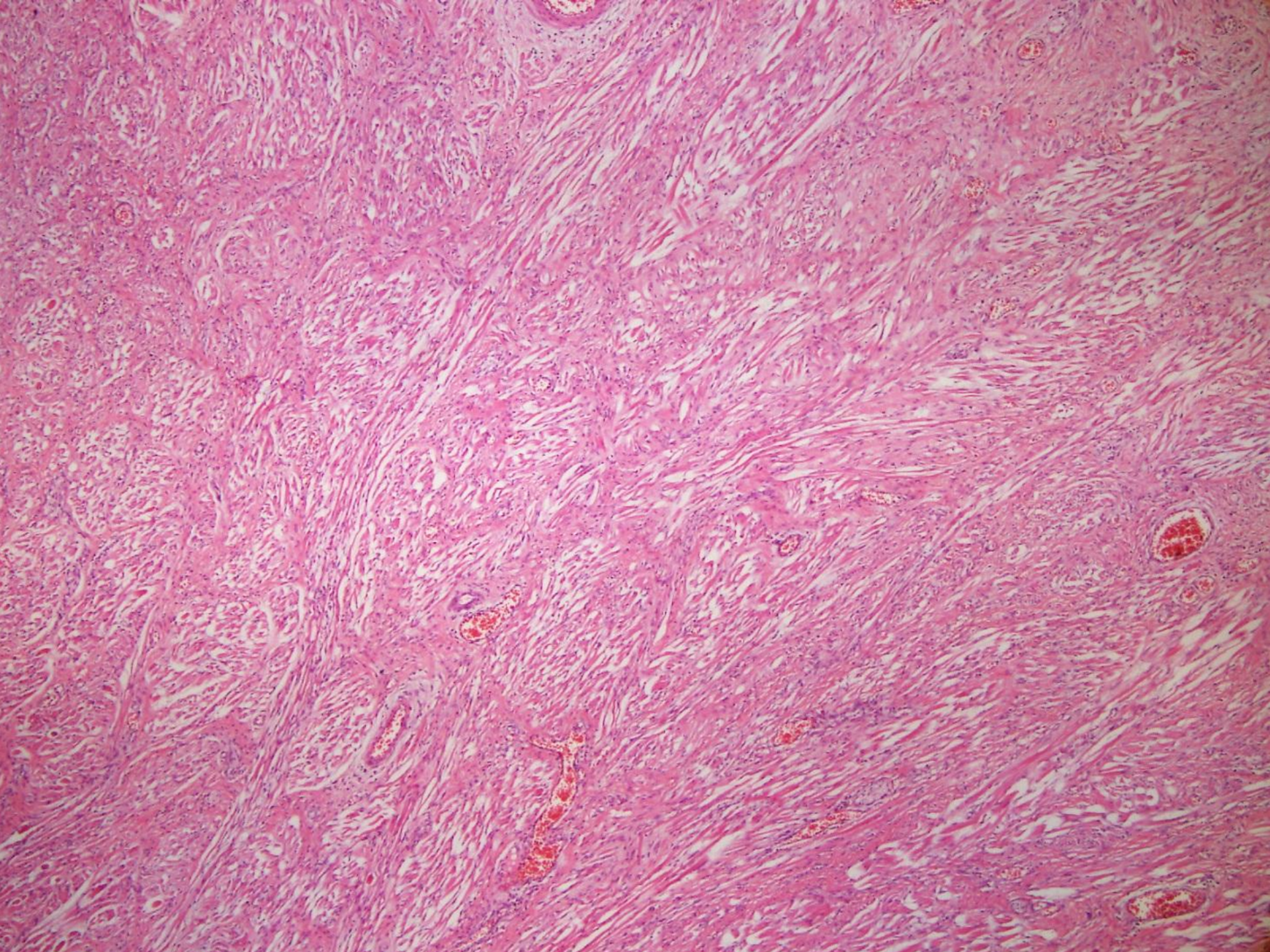


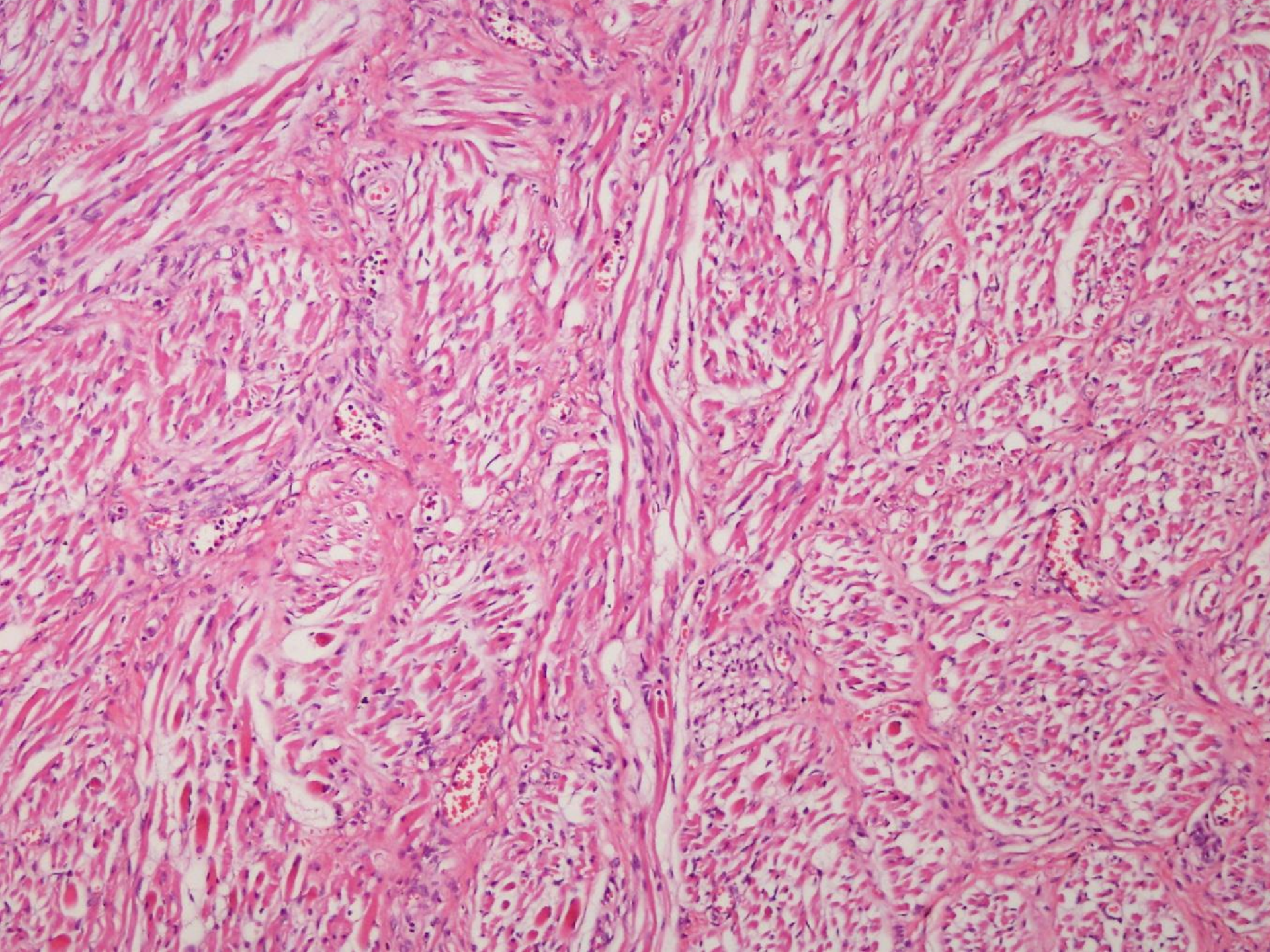
Derin yerleşimli leiomyosarkom, prognoz

- Retroperitoneal LMS beş yıllık sağ kalım %6-29
- Vasküler orijinli LMS prognozu kötüdür, olgular genellikle erken dönemde kaybedilir.
- Derin yumuşak doku LMS olgularında 5 yıllık sağ kalım %64, Yüksek histolojik derece, ileri yaş (>62 yaş), büyük tümör boyutu (>4cm) ve tümöre yapılan ilk girişimin yetersiz olması, olumsuz prognostik faktörler

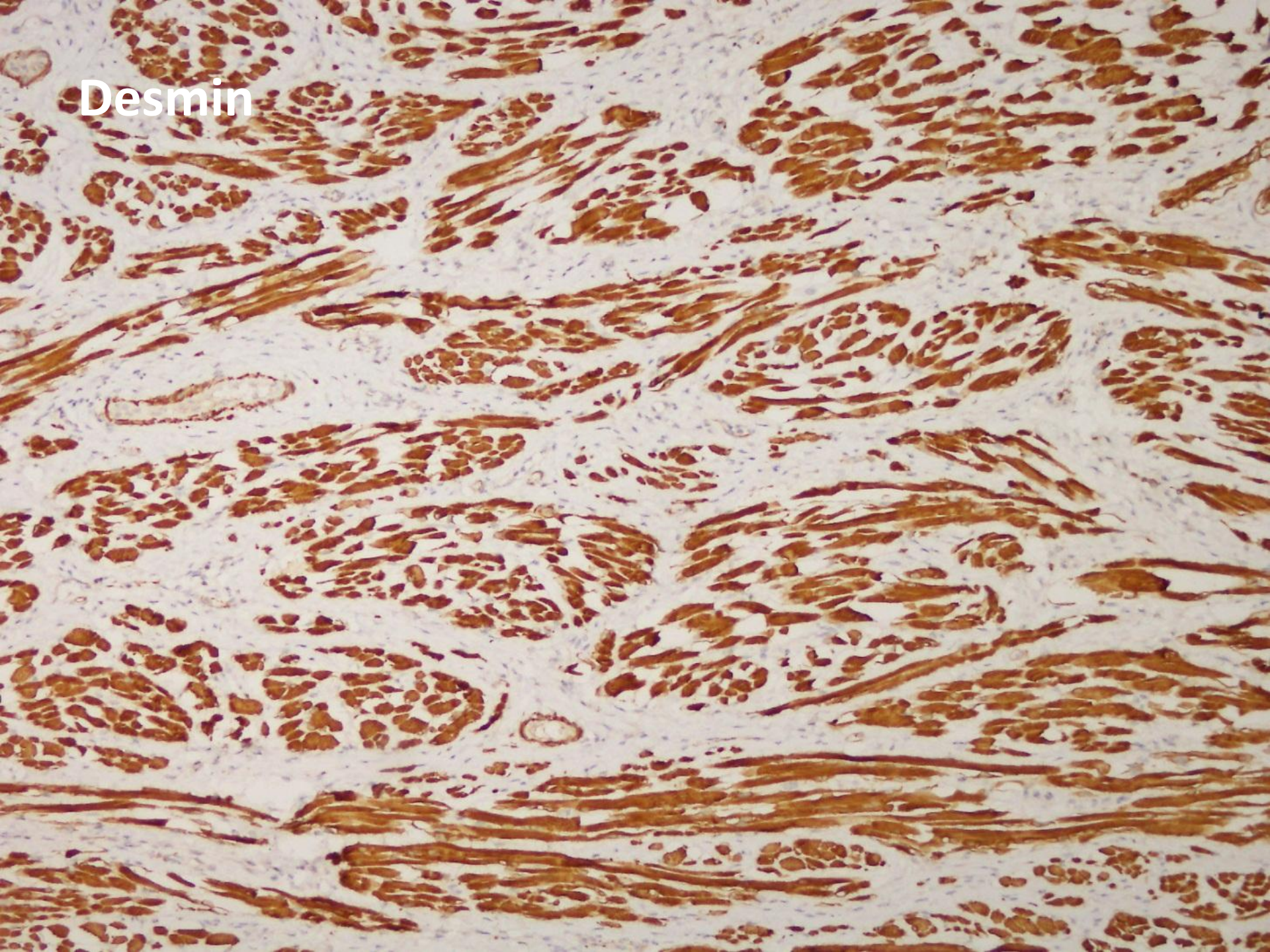
Rabdomyom

- Nadir görülür
- Erişkin tip ve fetal tip
- Erişkin tip en sık kardiyak yerleşimde ve baş-boyun bölgesinde orta yaş erişkinlerde (sıklıkla erkeklerde)
- Genital rabdomyom (vulva, vagen, serviks)





Desmin



Fetal tip rabdomyom

- Çok nadir
- Baş-boyun bölgesinde ve infantil/çocukluk çağında
- Ortalama 3 cm çaplı, soliter iyi sınırlı tümörler
- Miksoid zeminde atipi bulguları olmayan iğsi hücrelerin gevşek dizilimi , sitolojik atipi yok, mitotik aktivite yok veya çok seyrek
- Merkezde immatür iğsi hücreler, periferde daha matür görünümlü hücrelerin zonal dizilim
- Demetler oluşturmuş sellüler örnekler bazen ciddi boyutlarda ayırıcı tanı sıkıntısı yaratabilir

Rabdomyosarkom

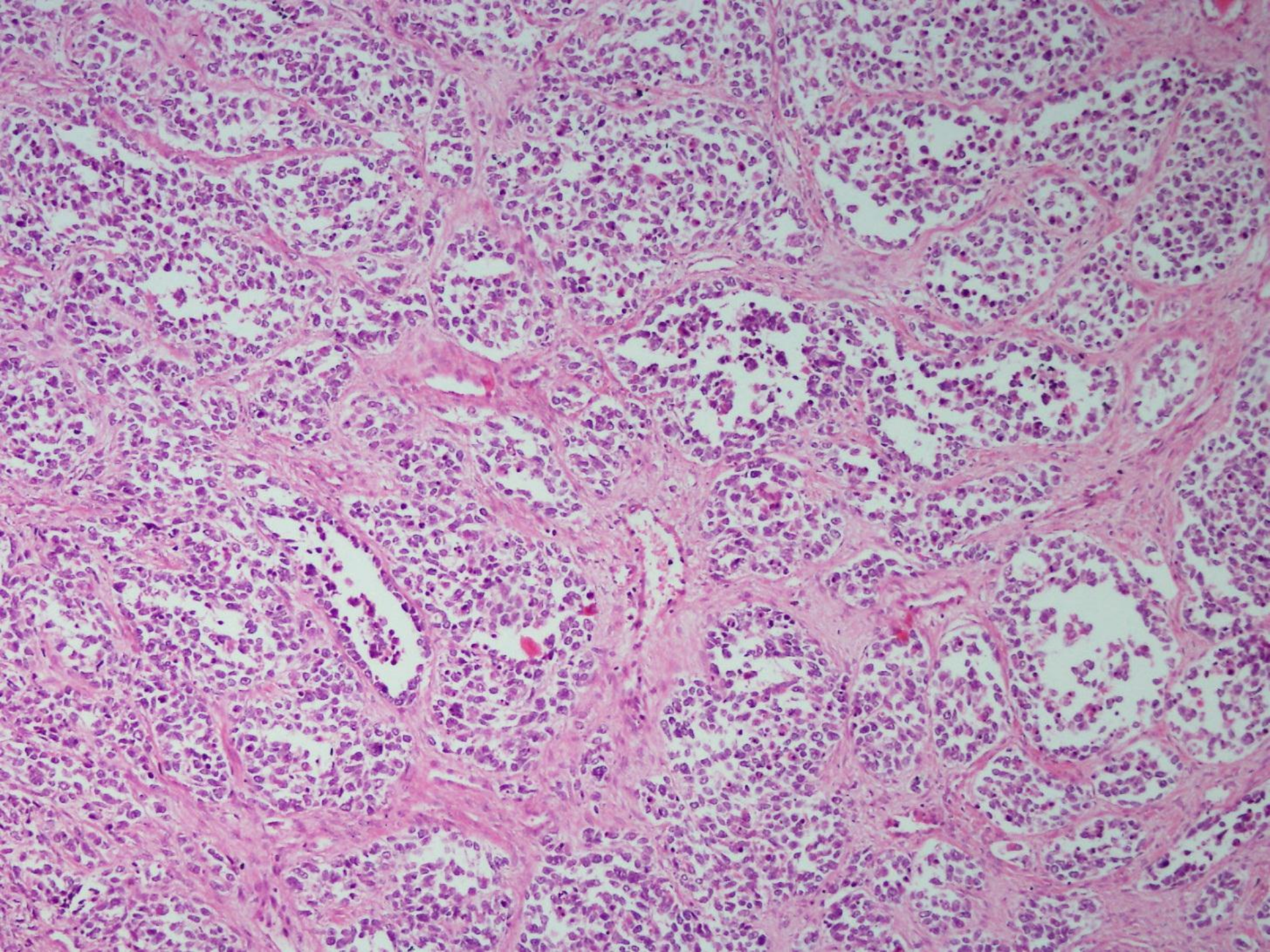
- Embriyonel (ilk iki dekada, baş-boyun ve genitoüriner bölgede sık)
- Alveoler (2-3.dekada, ekstremitelerde sık)
- Pleomorfik (nadir görülür, erişkinlerde)

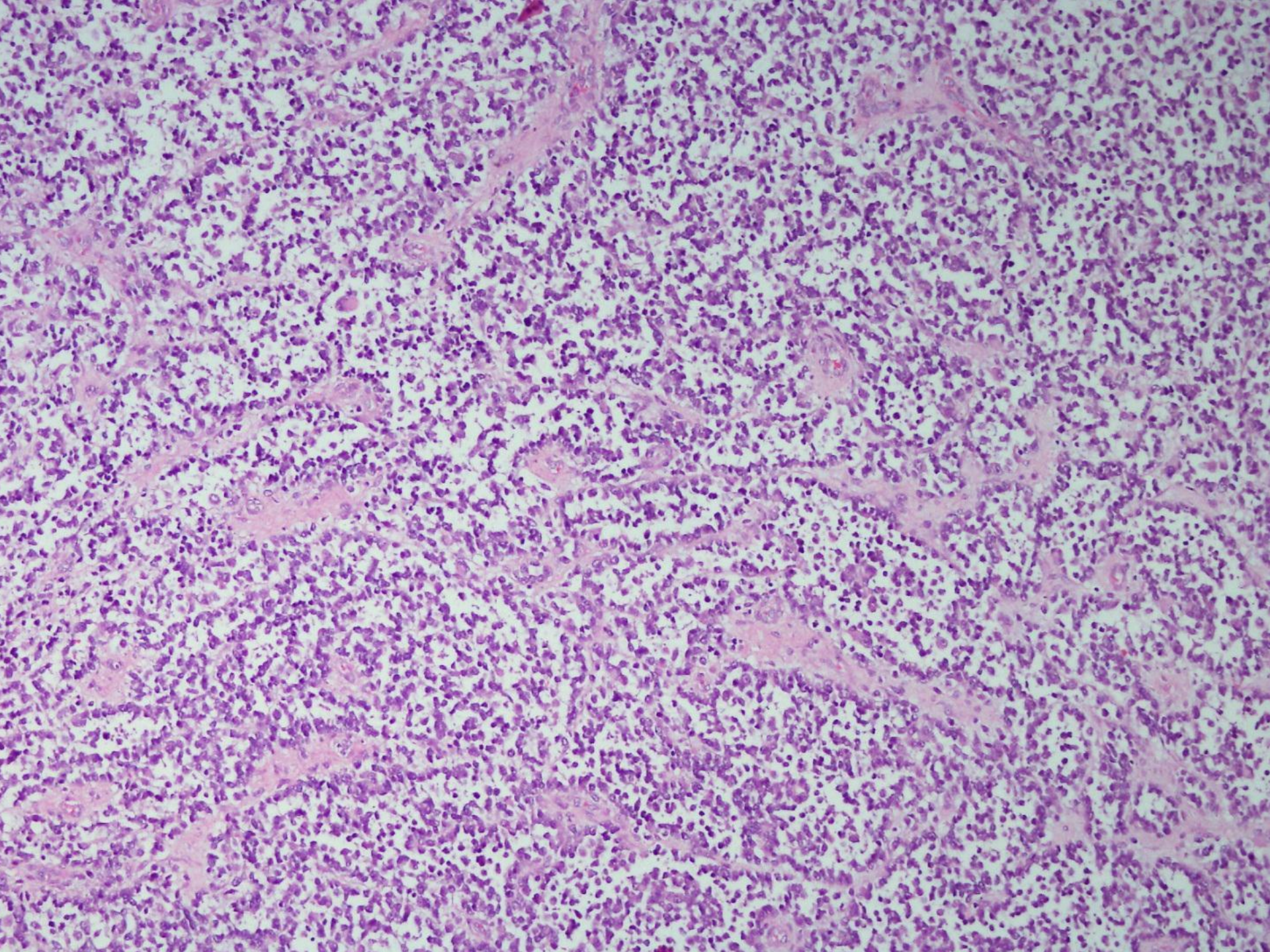
Alveoler rms

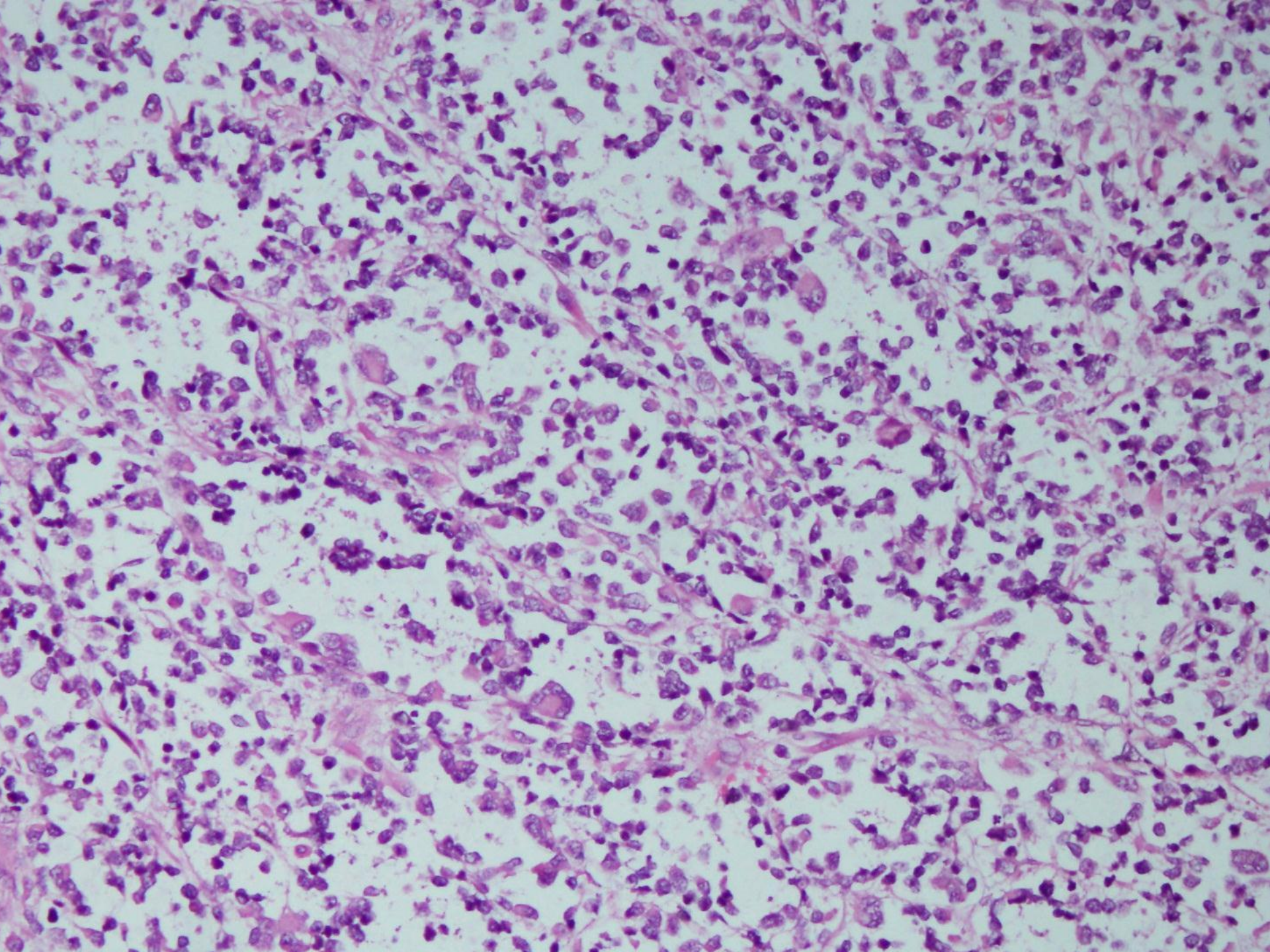
- RMS ların \sim % 30 u
- En sık 10 -25 yaşlarında
- Ekstremitelerde sık
- Yuvarlak hücreler + multinükleer dev h ler + diskoheziv hücrelerin alveoler dizilimi
- Spesifik moleküler bulgusu var
 - * $t(2;13)(q35;q14)$ = PAX3-FOXO1 füzyonu (\sim % 70)
 - * $t(1;13)(p36;q14)$ = PAX7-FOXO1 füzyonu (\sim %15)
 - * translokasyon yok (\sim %15)

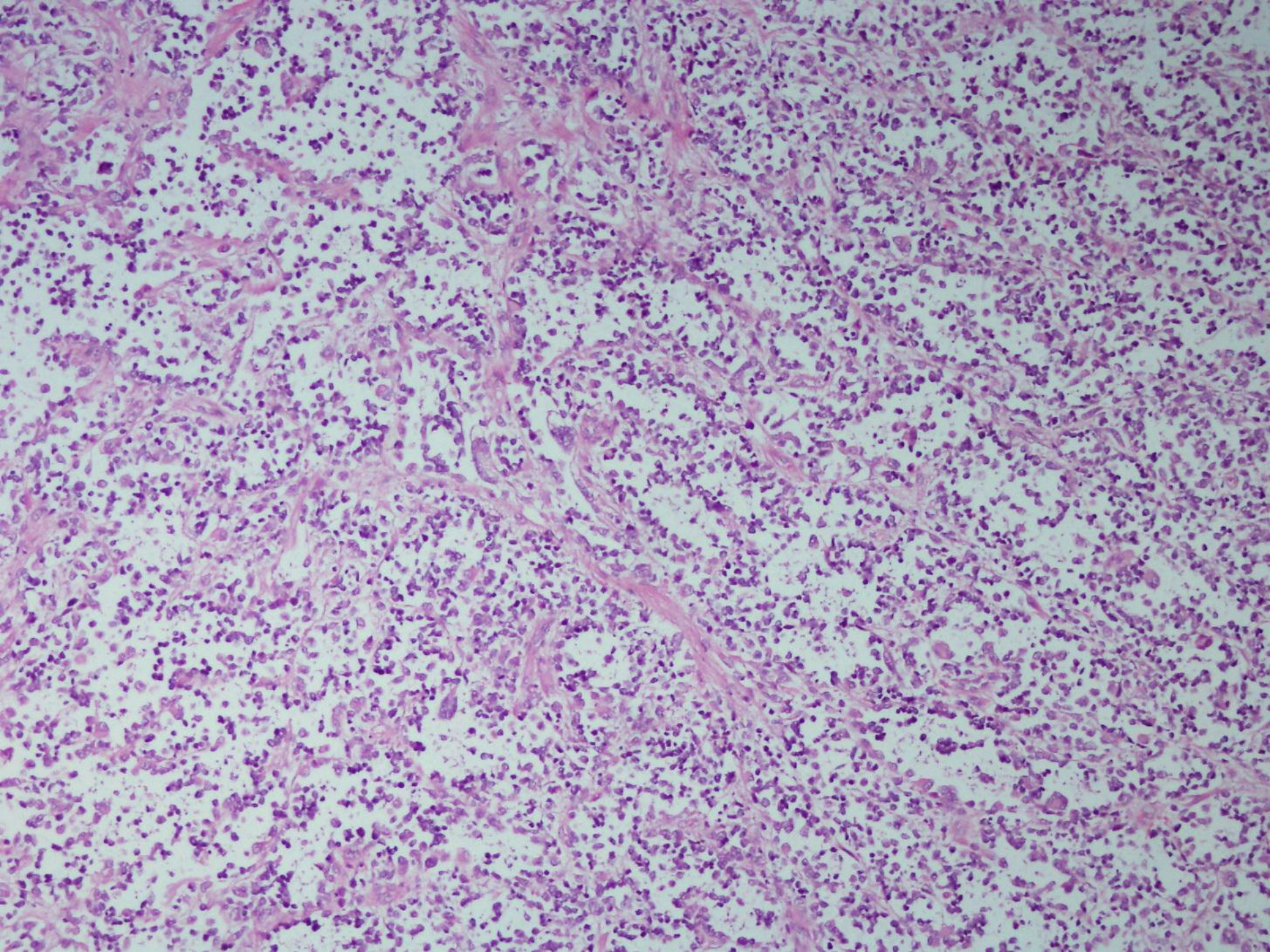
- Son yıllarda yapılan bir çalışmada; alveoler rms morfolojili ancak translokasyonu olmayan olguların embriyonel rms e benzer prognoz gösterdiği bildirilmiştir.

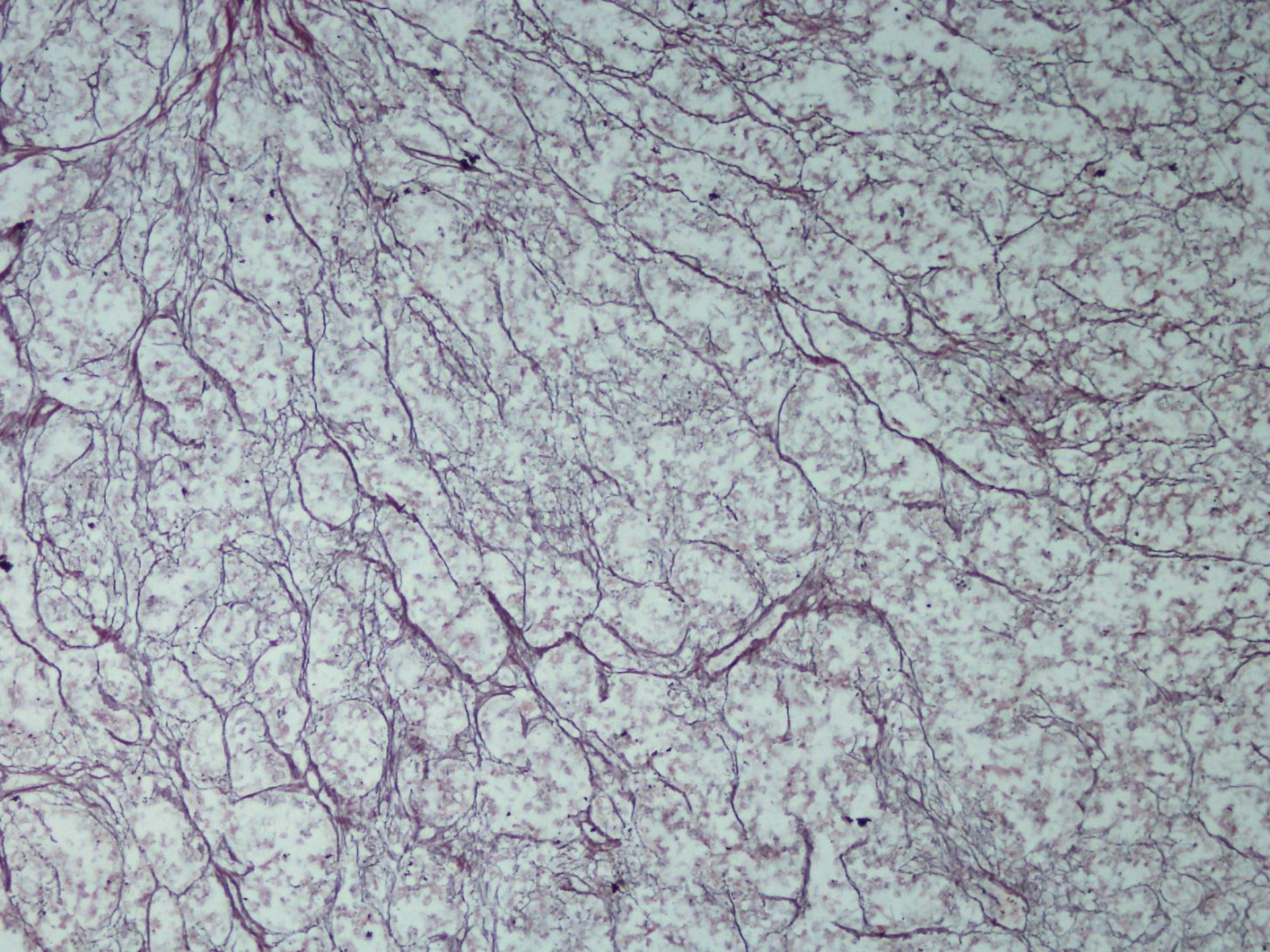
Williamson D, et al. J Clin Oncol. 2010;28:2151



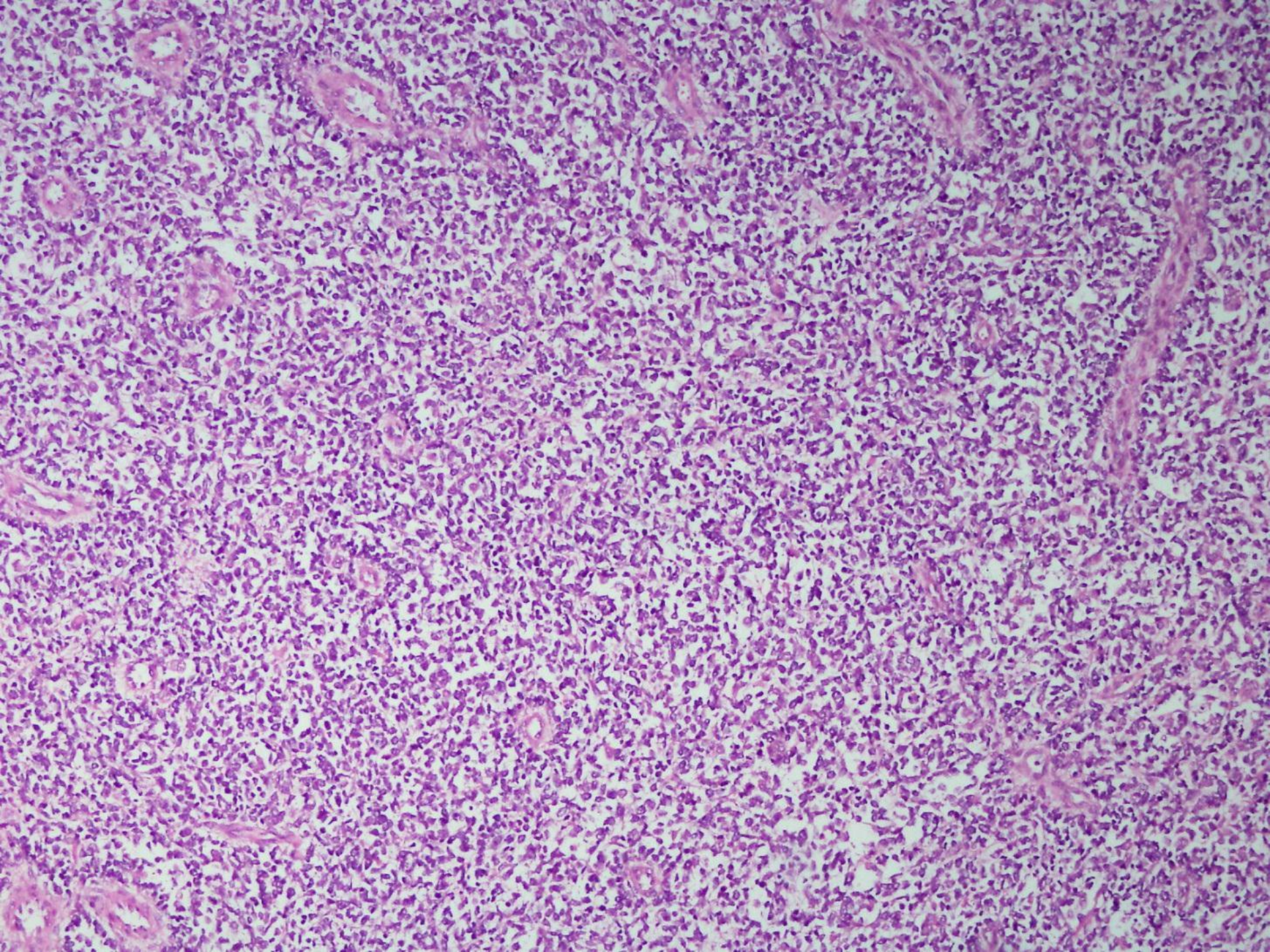


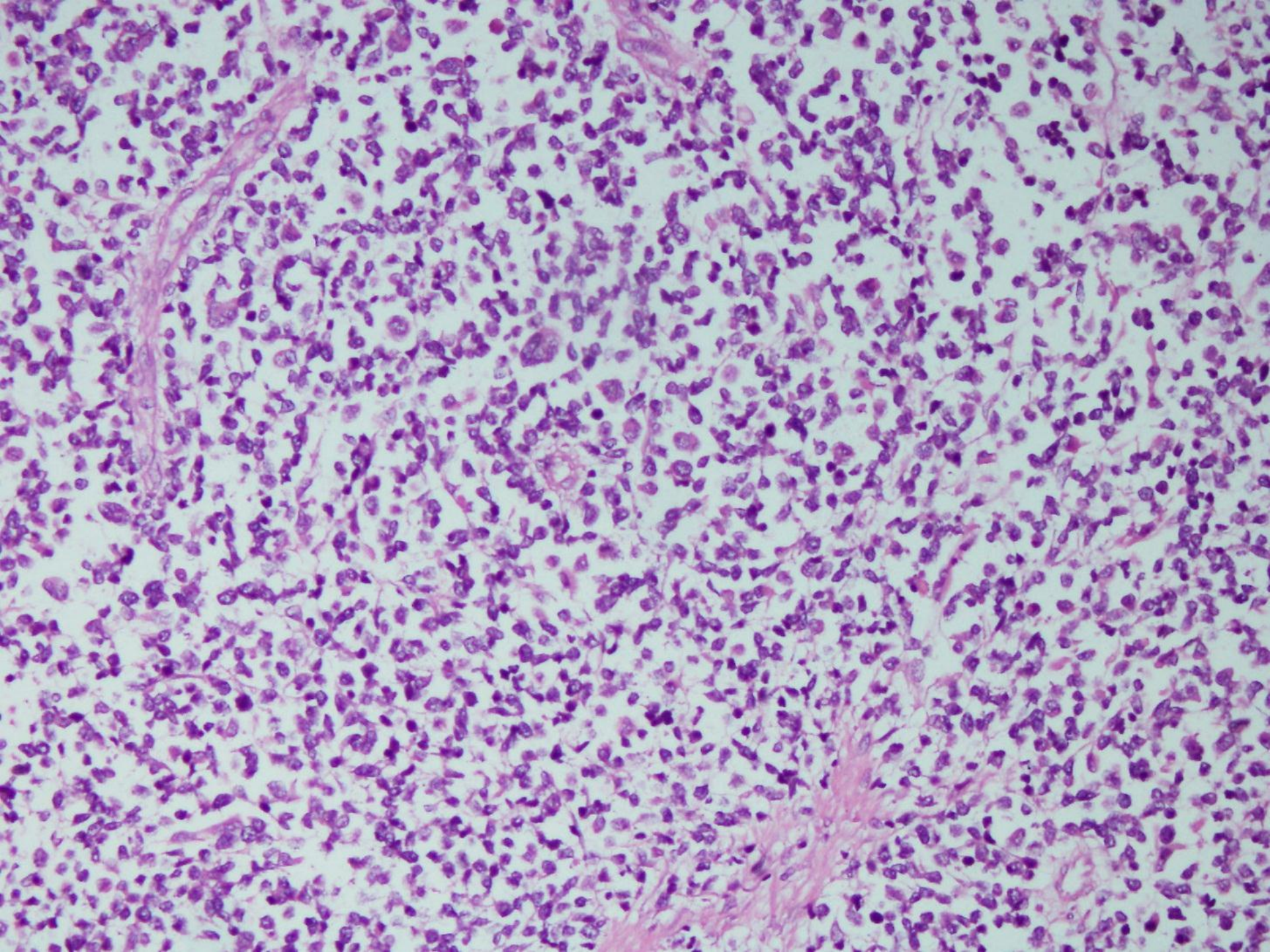


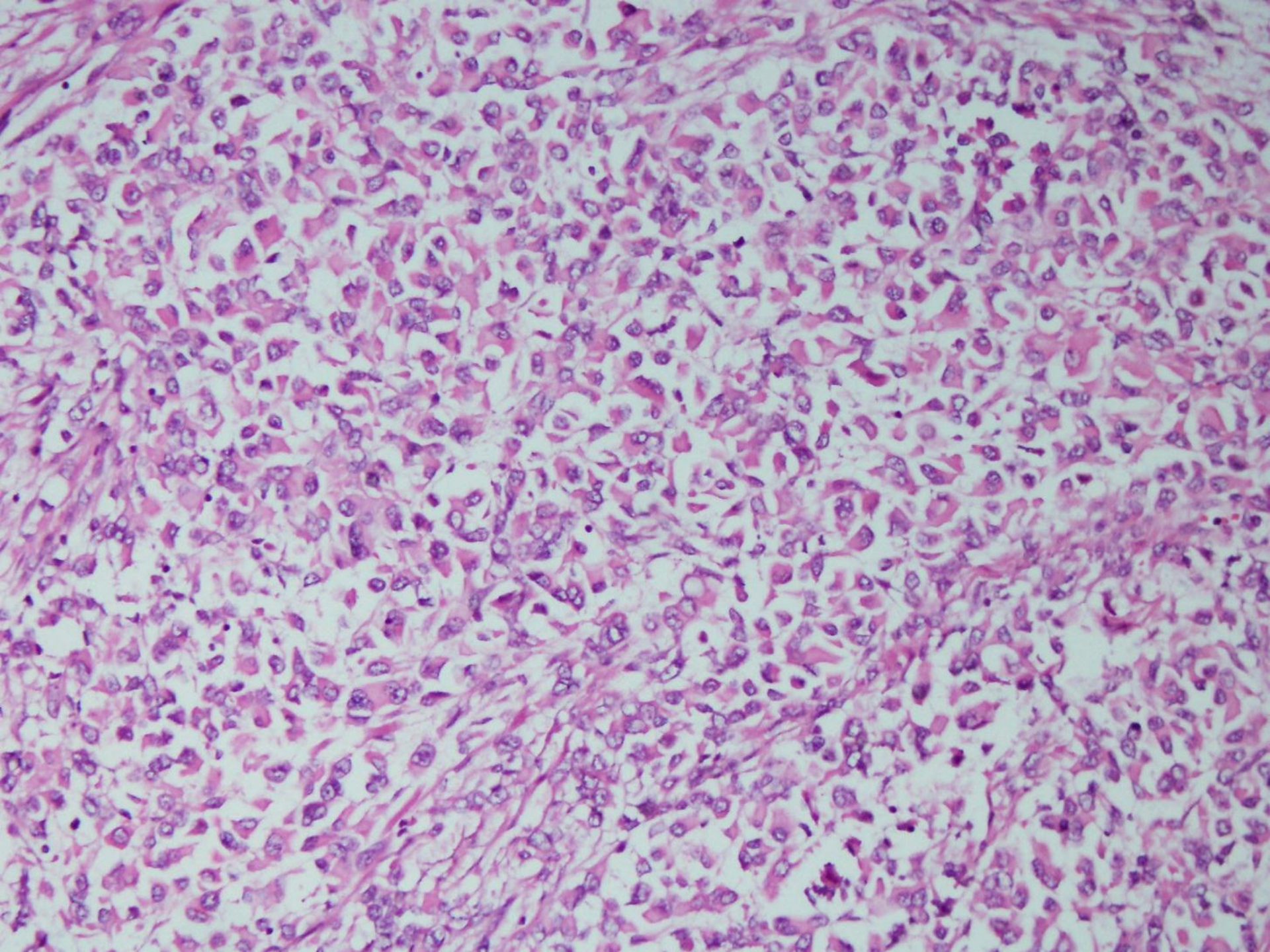








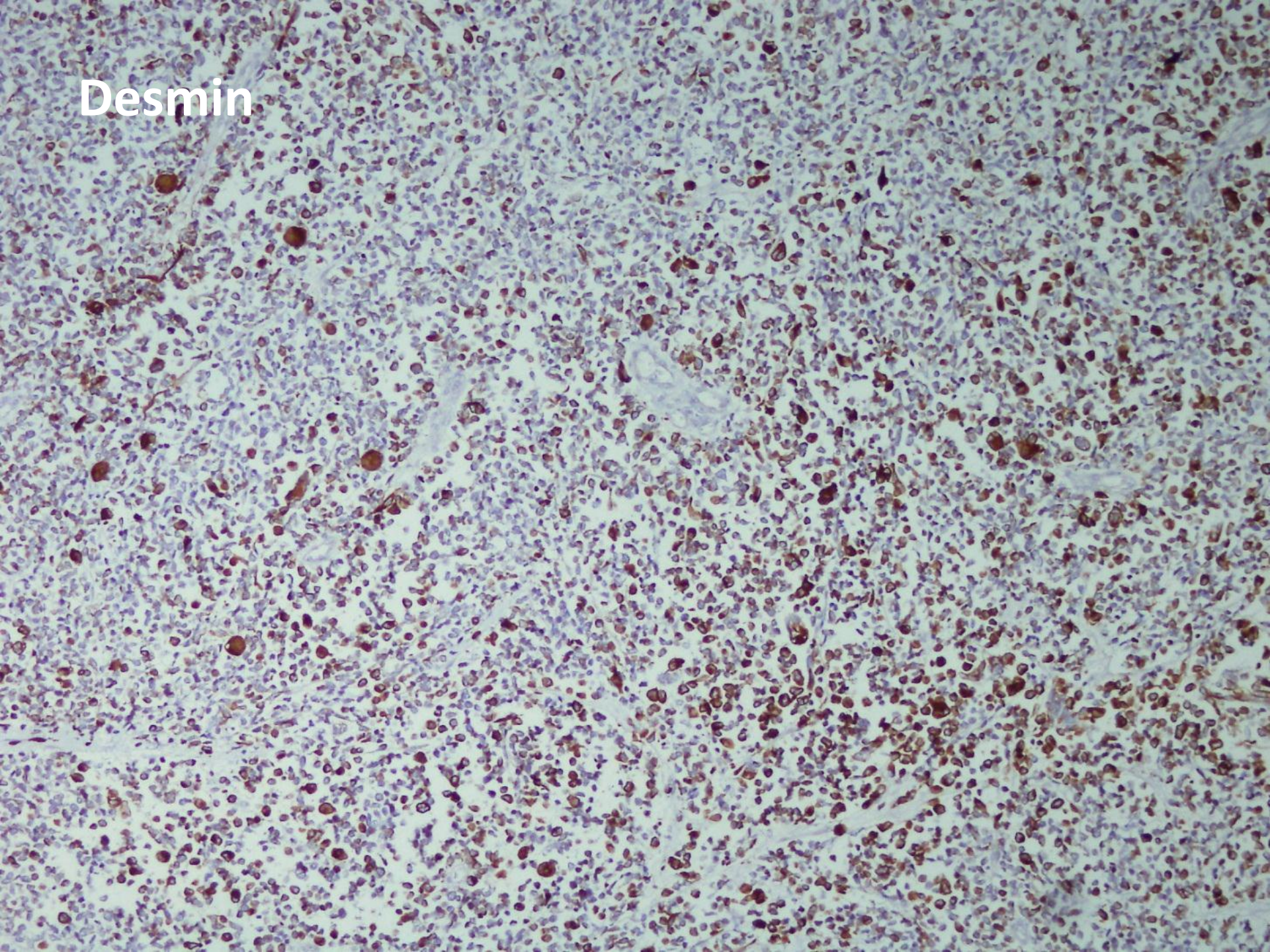




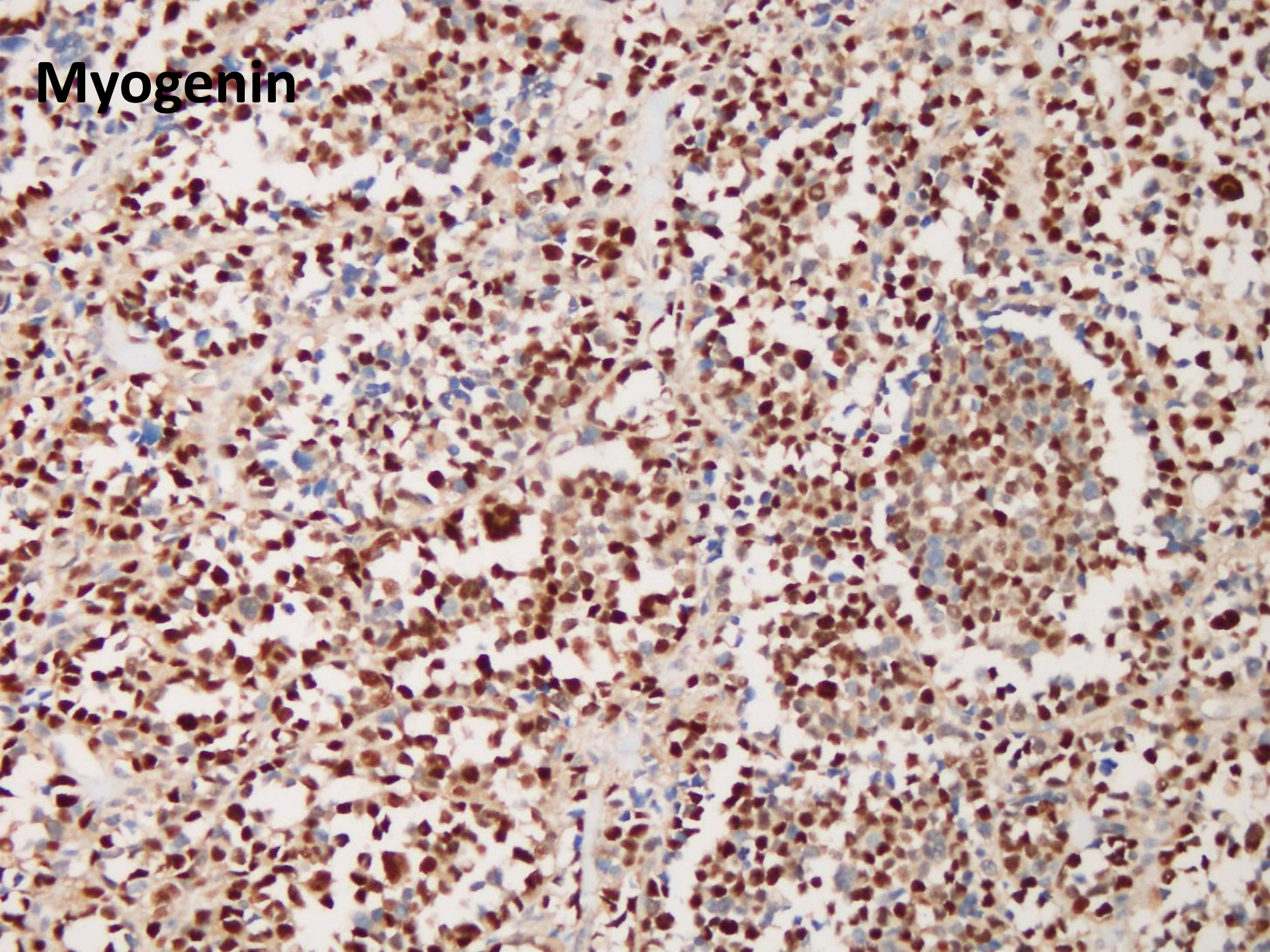
Rabdomyosarkom, immunhistokimya

- Aktin ve desmin %94-99 olguda pozitif ancak spesifik değil
- MyoD1 ve myogenin(myf4) ile %97 pozitif
- MyoD1 ile teknik sorunlar yaşanabiliyor
- Myogenin ile embriyonel tipte pozitiflik fokal iken alveoler tipte daha yaygın

Desmin

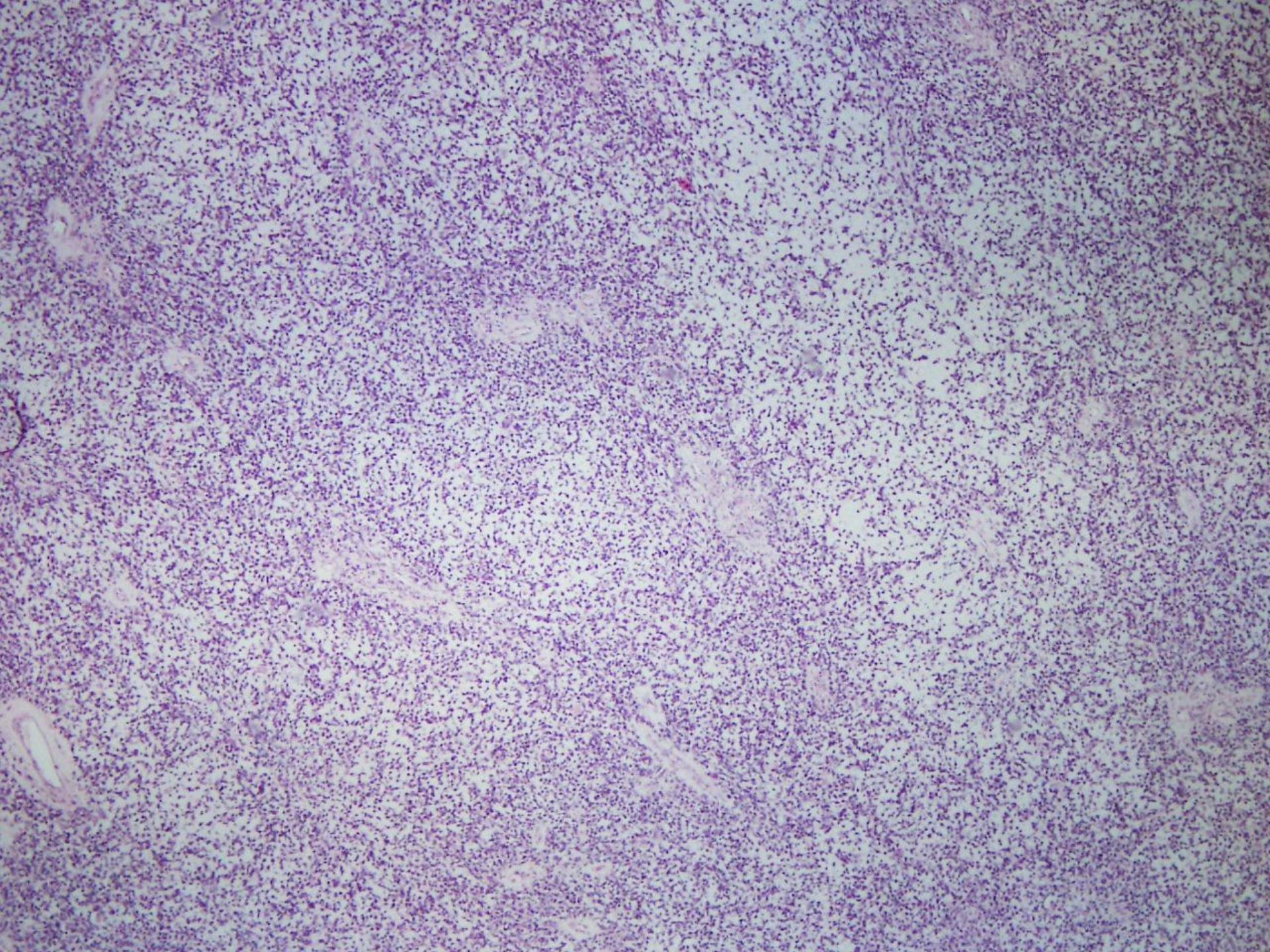


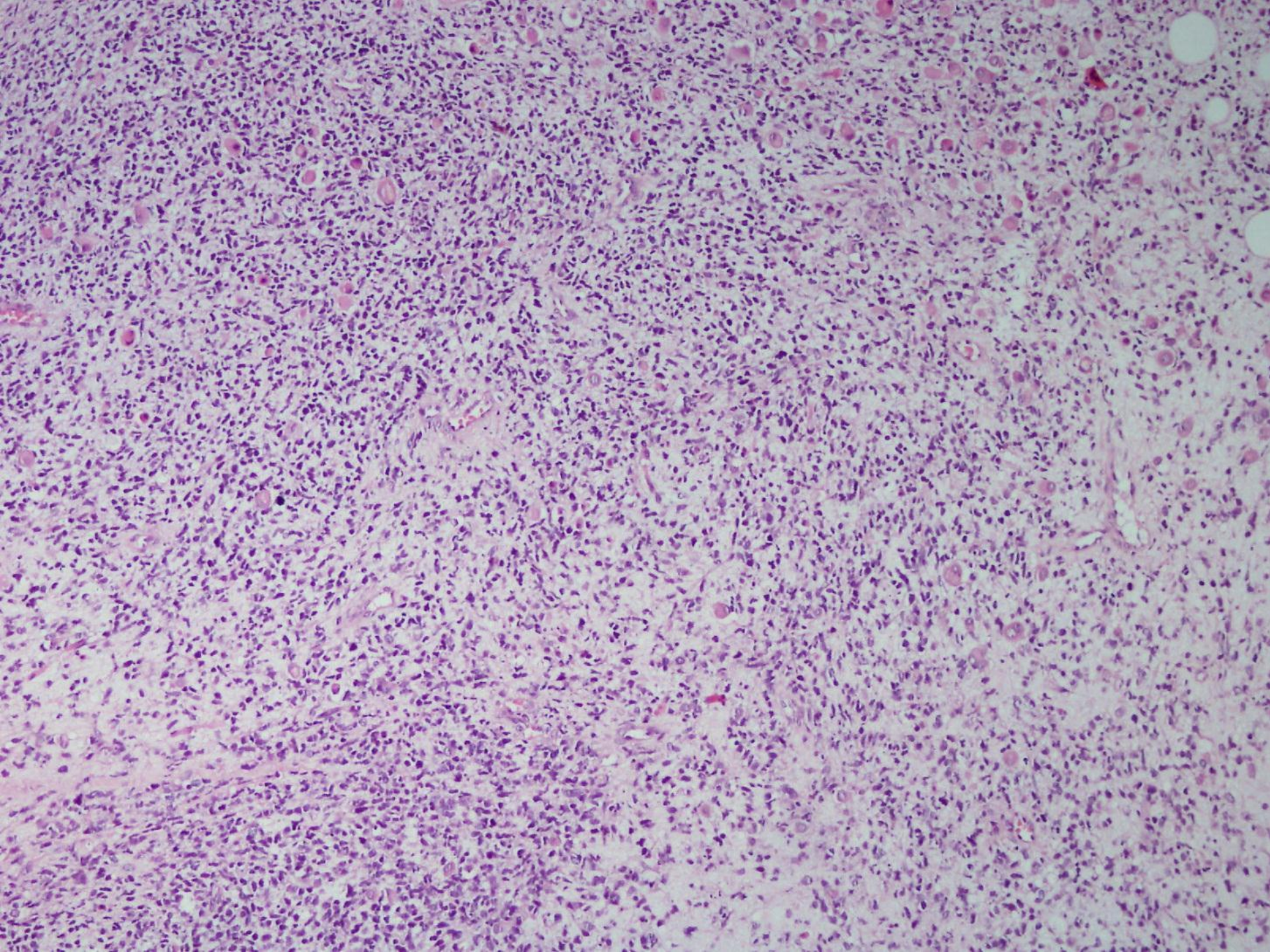
Myogenin

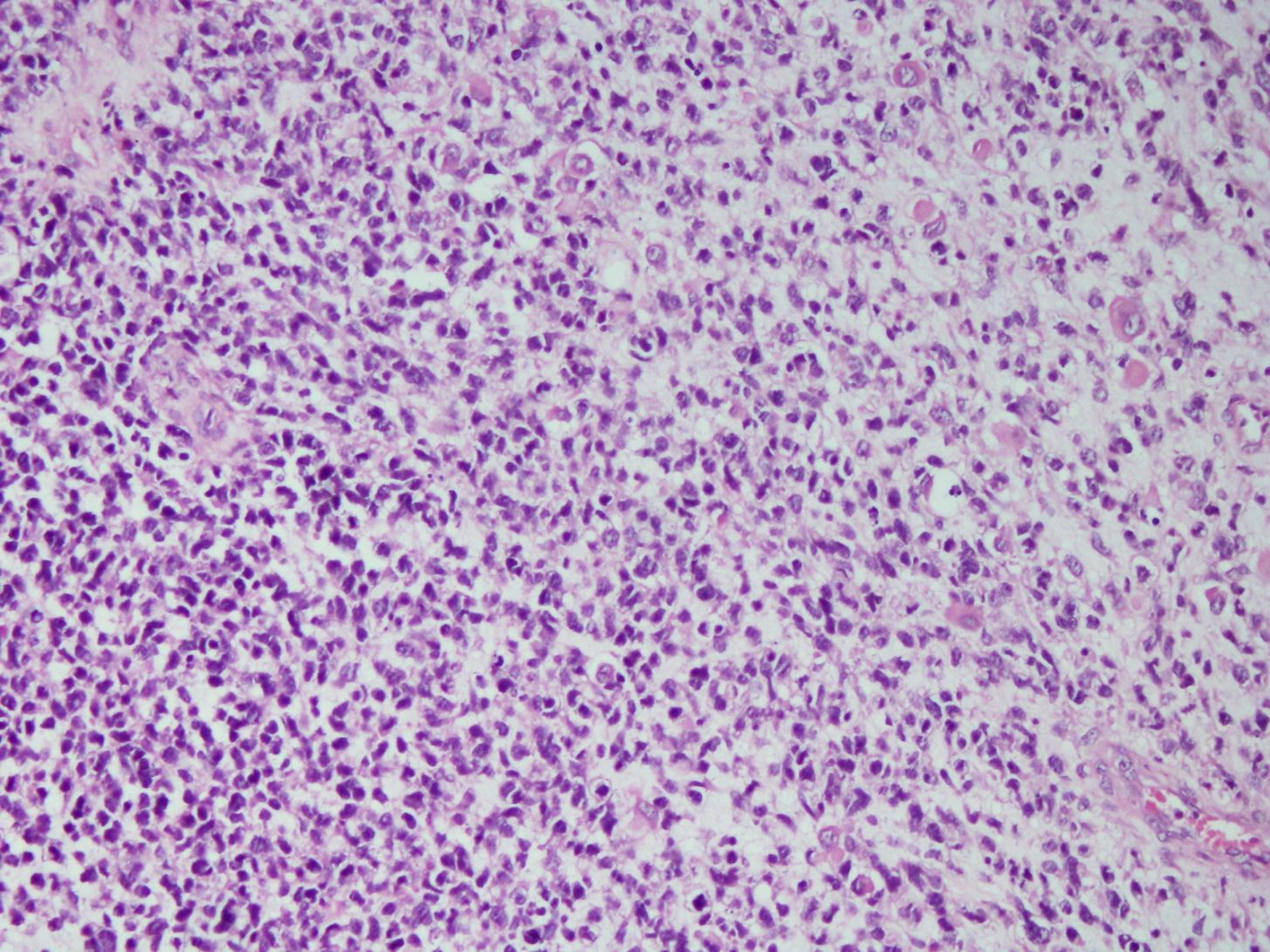


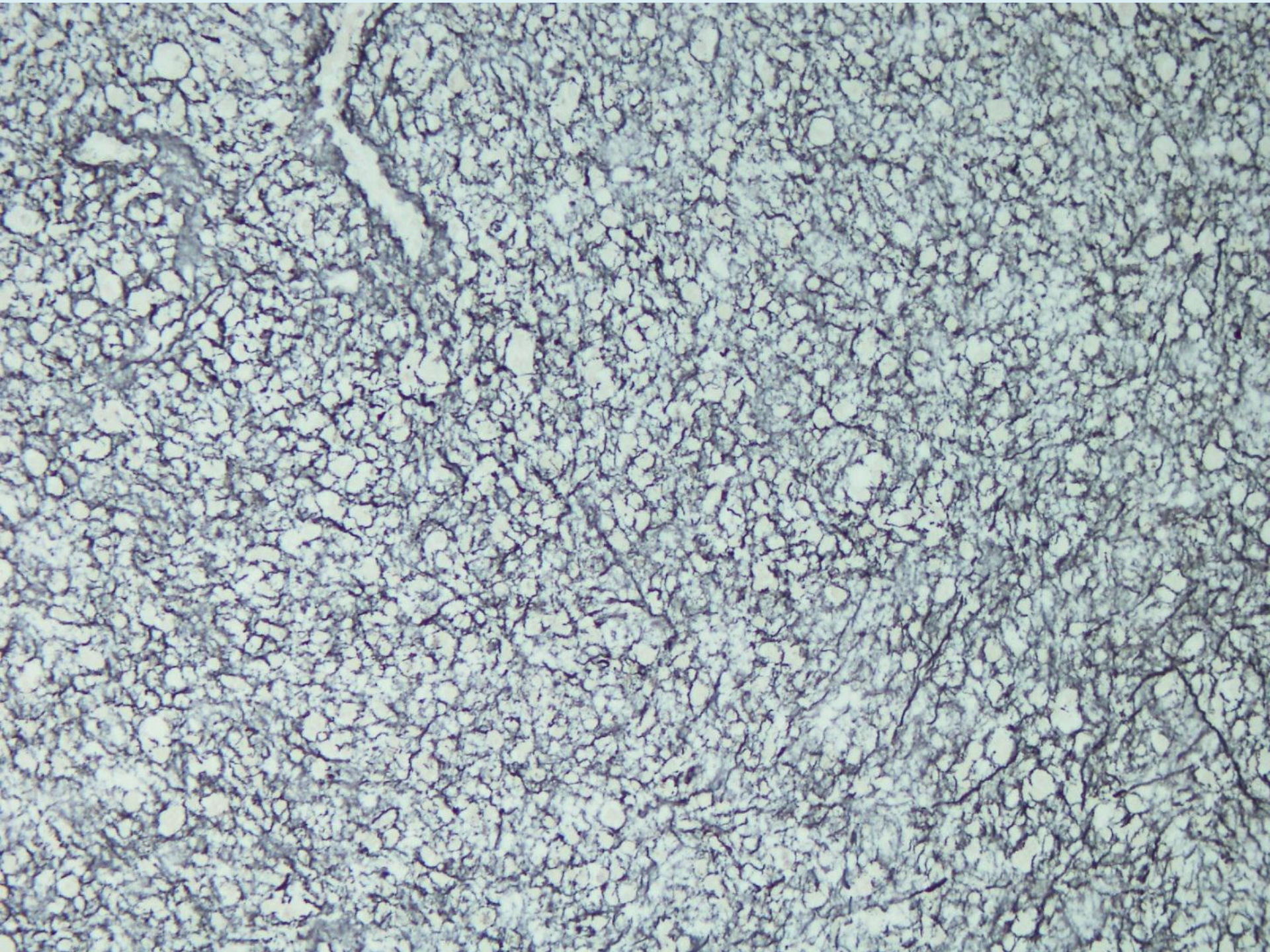
Embriyonel rms

- En sık ilk iki dekatta
- En sık baş-boyun ve genitoüriner yerleşimli
- İğsi hücreler + yuvarlak hücreler ve solid gelişim
- Konvansiyonel dışı üç alt tipi var
 - * Botriyoid tip
 - * İğ hücreli tip
 - * Anaplastik tip

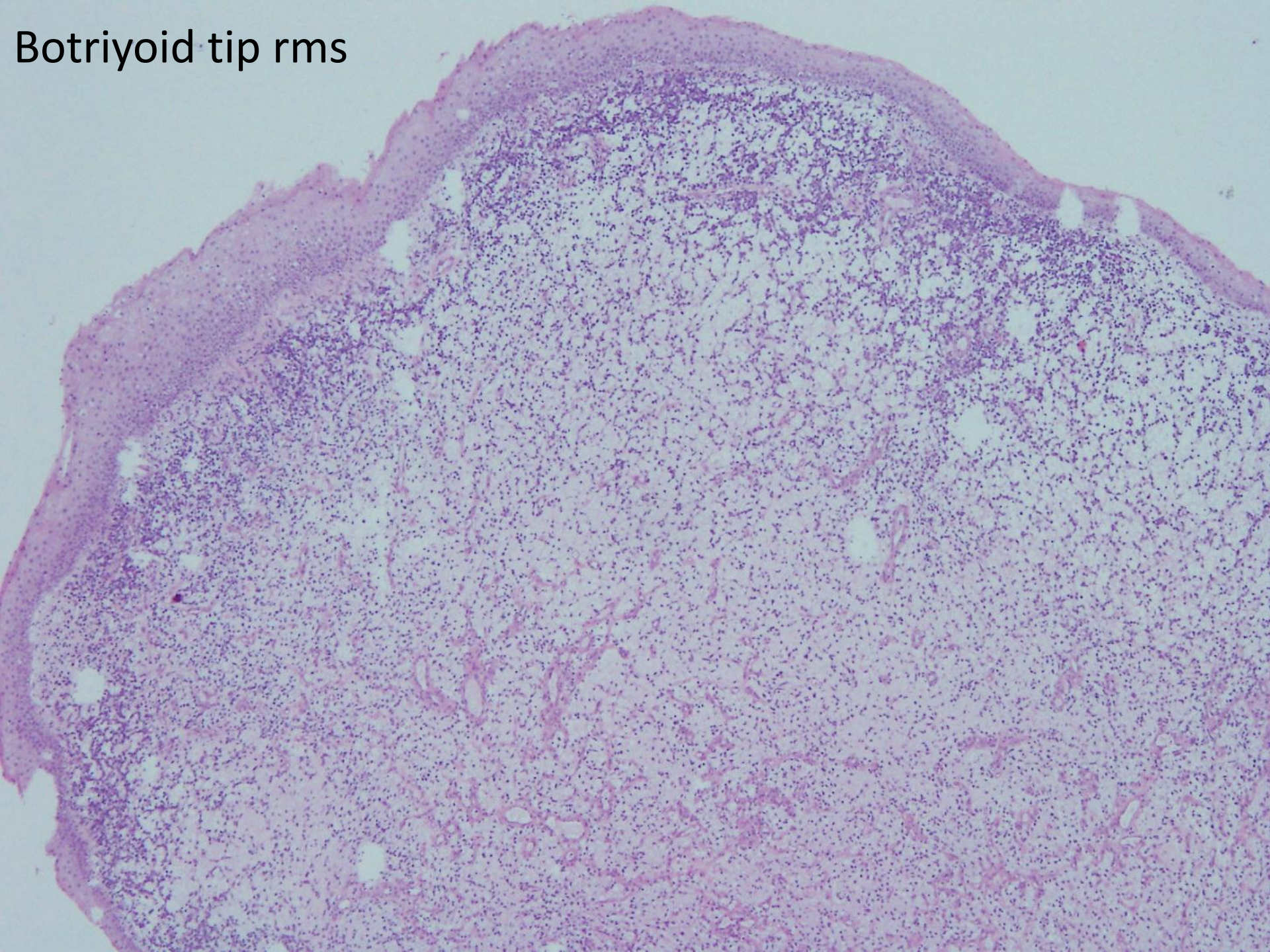


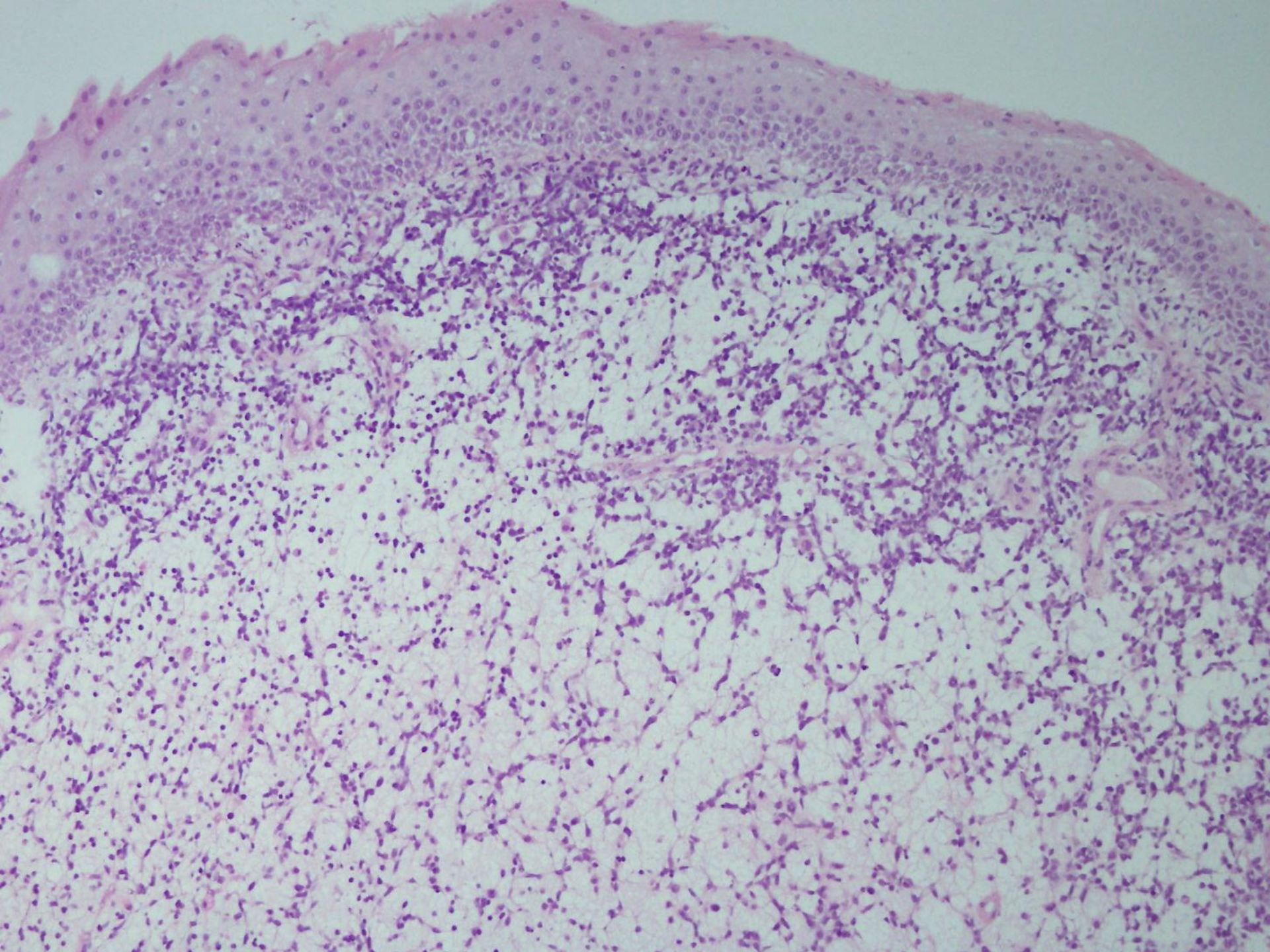




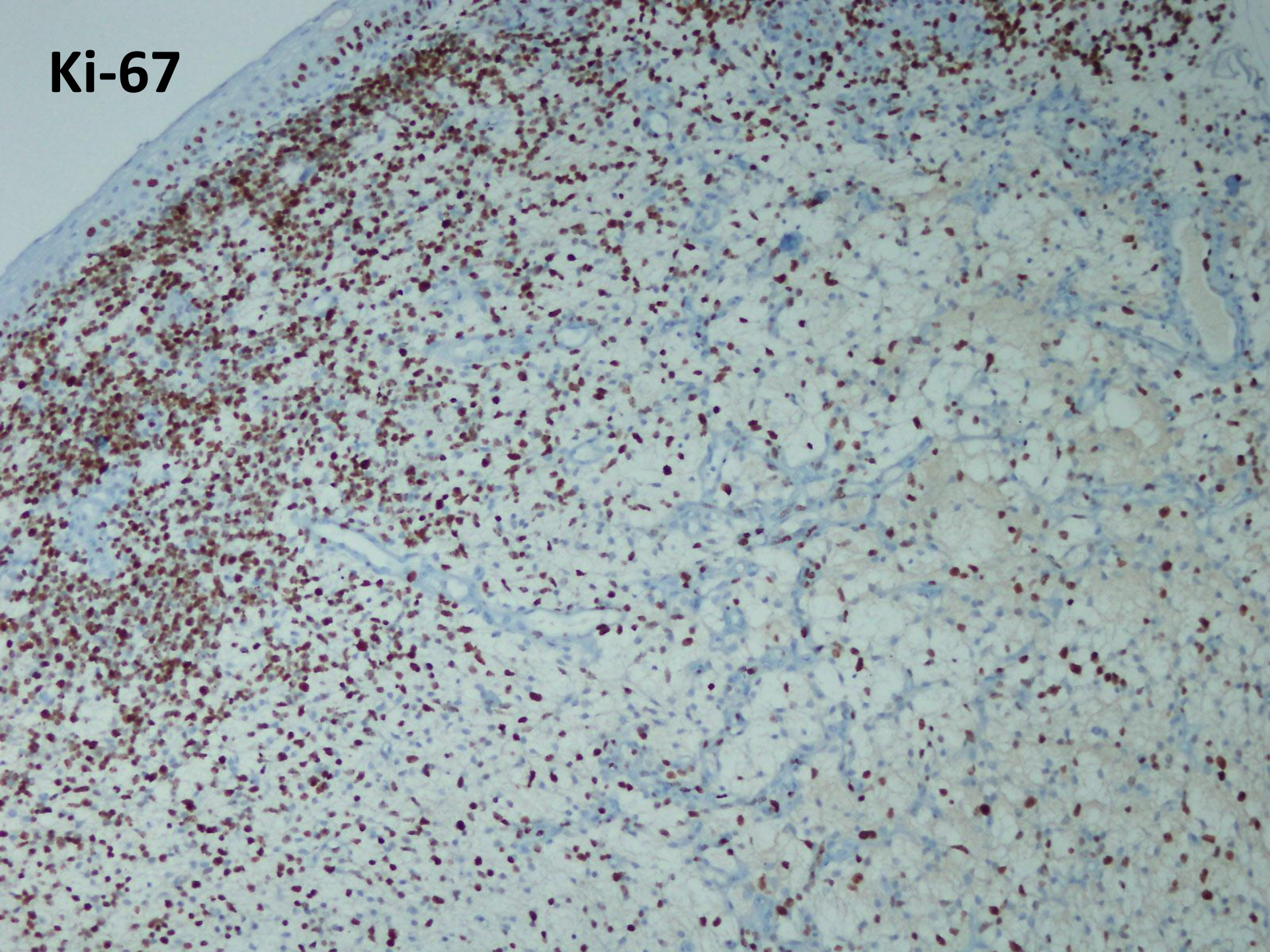


Botriyoid tip rms

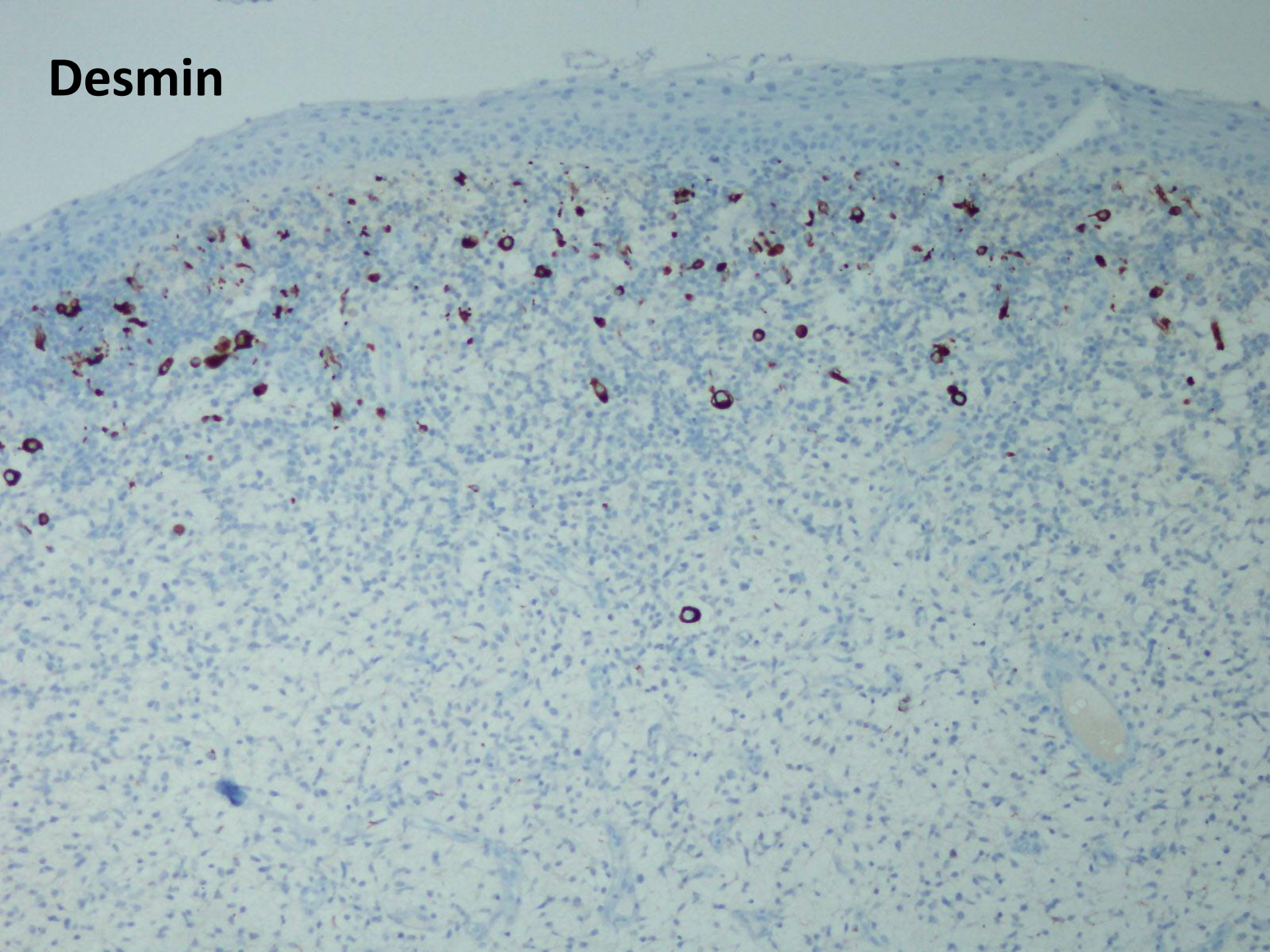




Ki-67

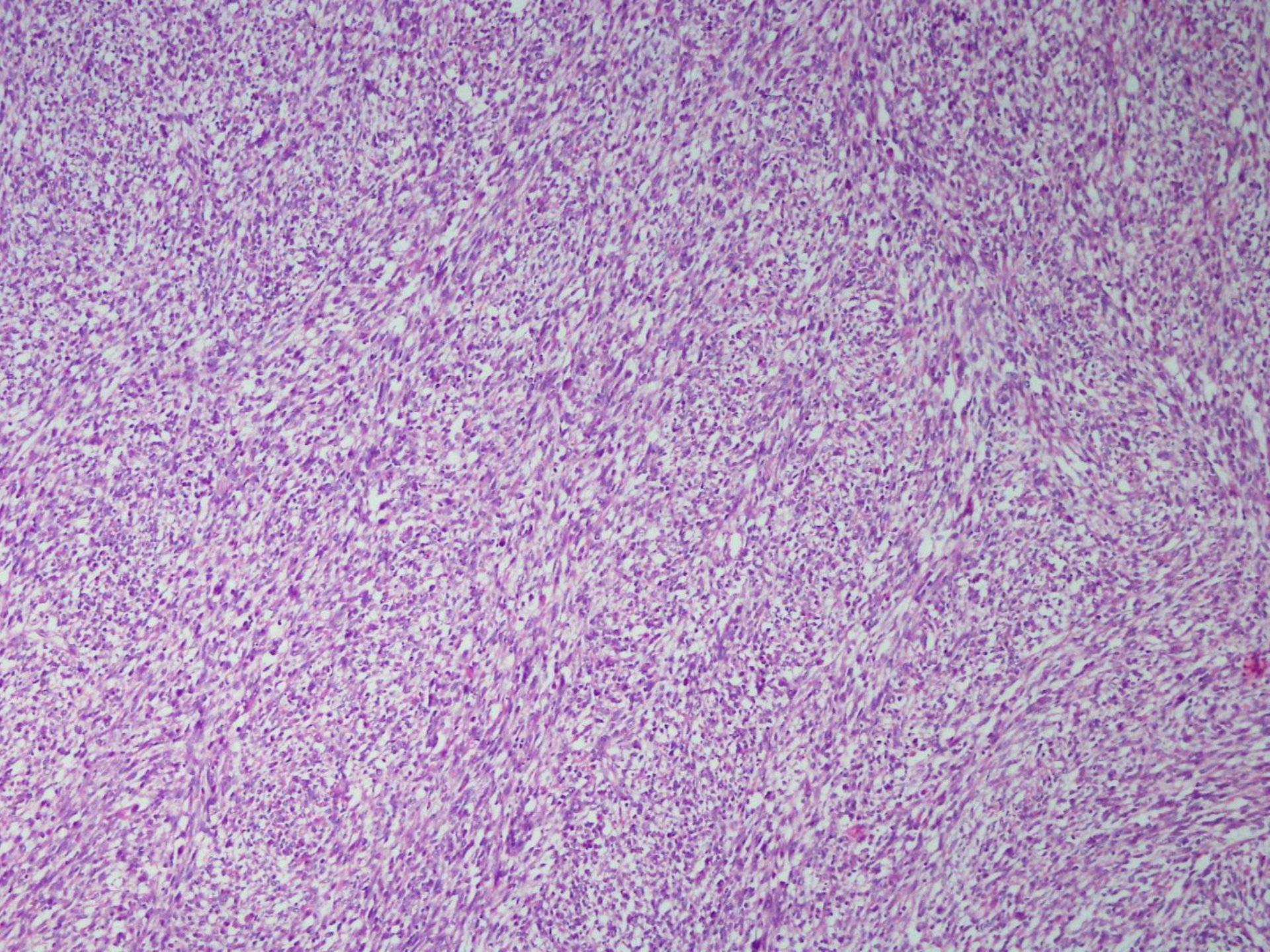


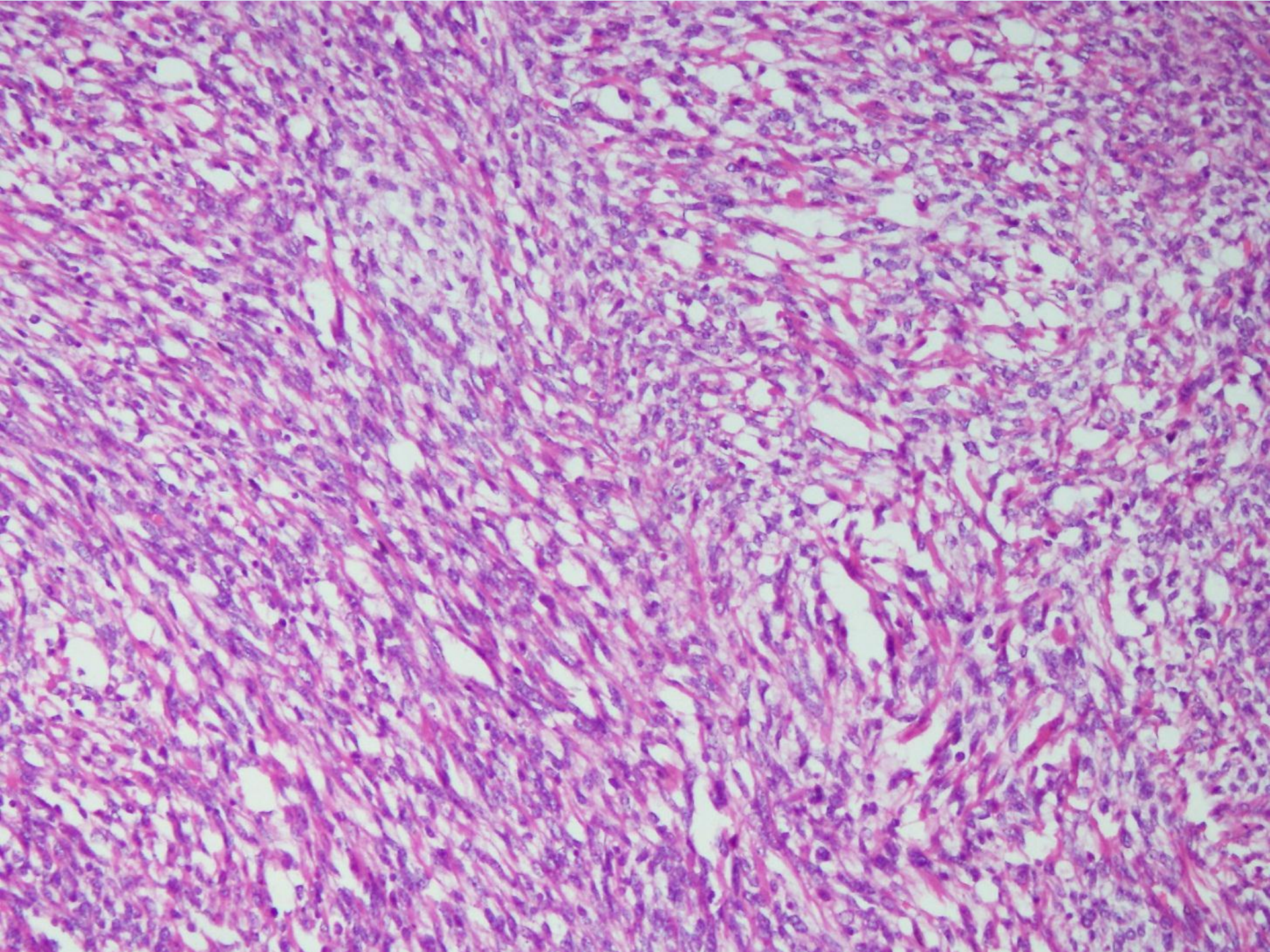
Desmin



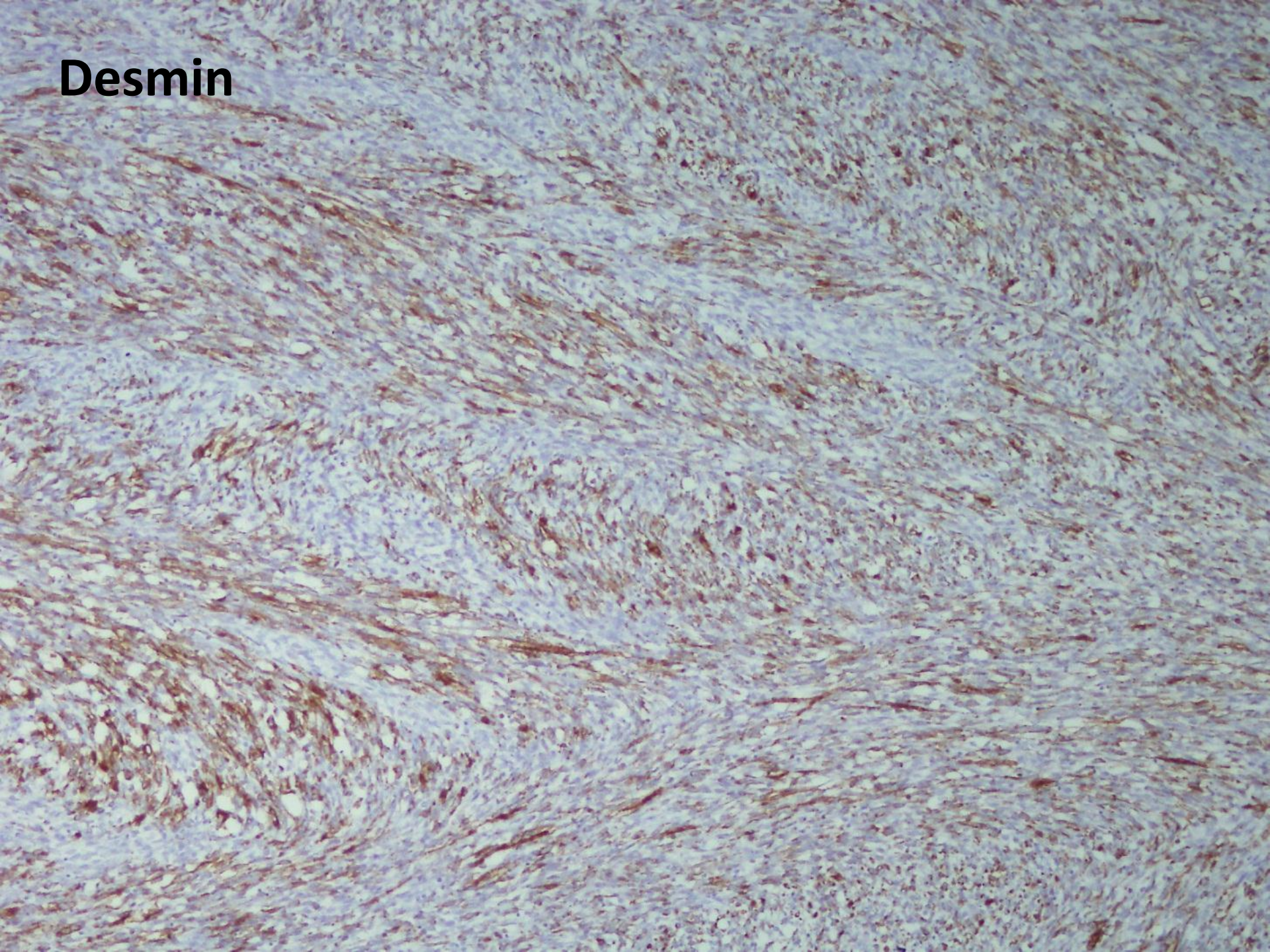
İğ hücreli rabdomyosarkom

- Çocuklarda paratestiküler alanda, erişkinlerde baş-boyun yerleşiminde sık
- Embriyonel tipin alt grubu ancak ortak genetik veri yok
- Ayırıcı tanıda malign periferik sinir kılıfı tümörü, fibrosarkom veya leiomyosarkom
- İmmunohistokimyasal belirteçler (desmin yanısıra myogenin ve MyoD1) ayırıcı tanıda yardımcı
- Prognoz çocukluk dönemi olgularında çok iyi ancak erişkinlerde görece kötü

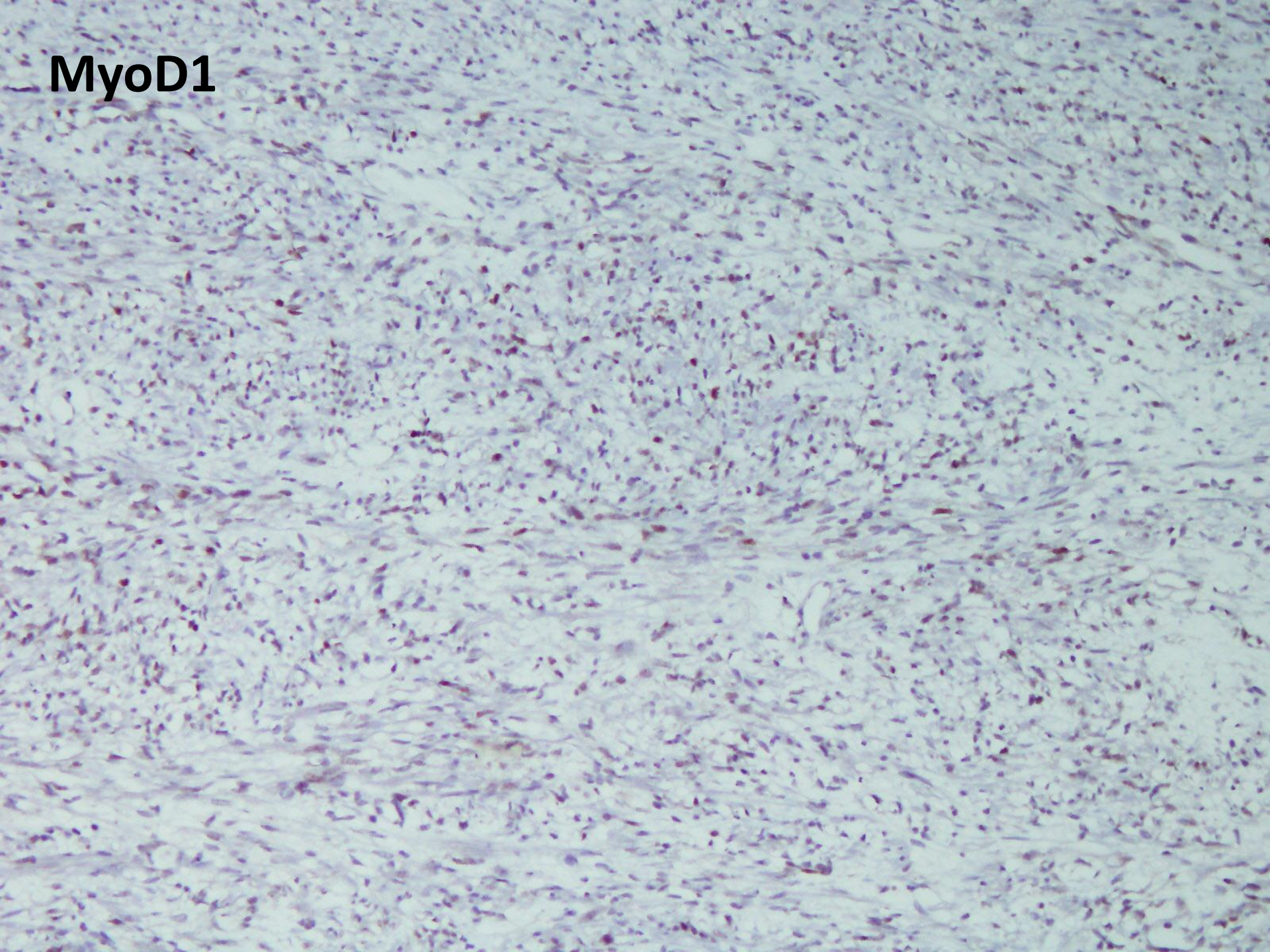




Desmin

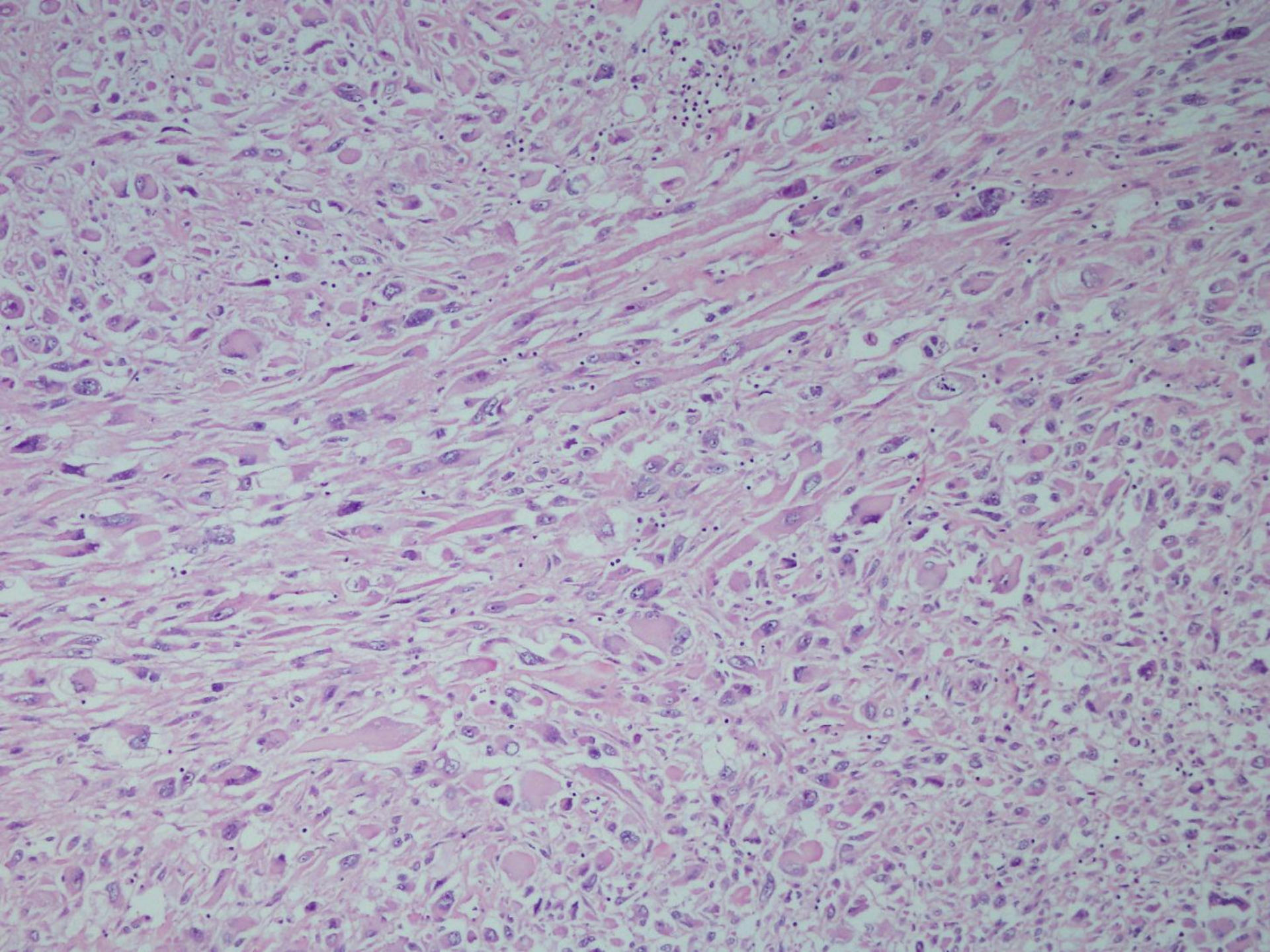


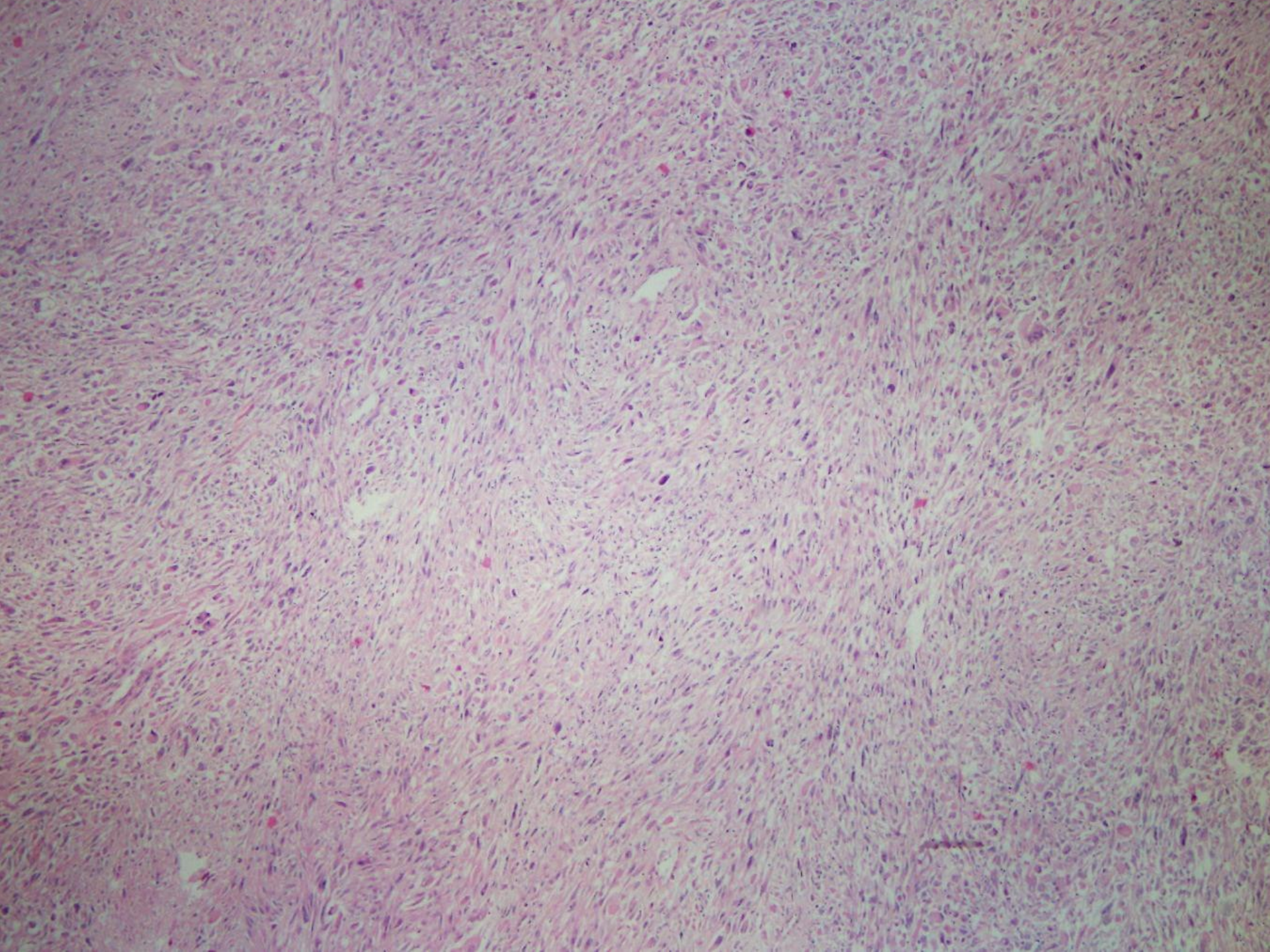
MyoD1

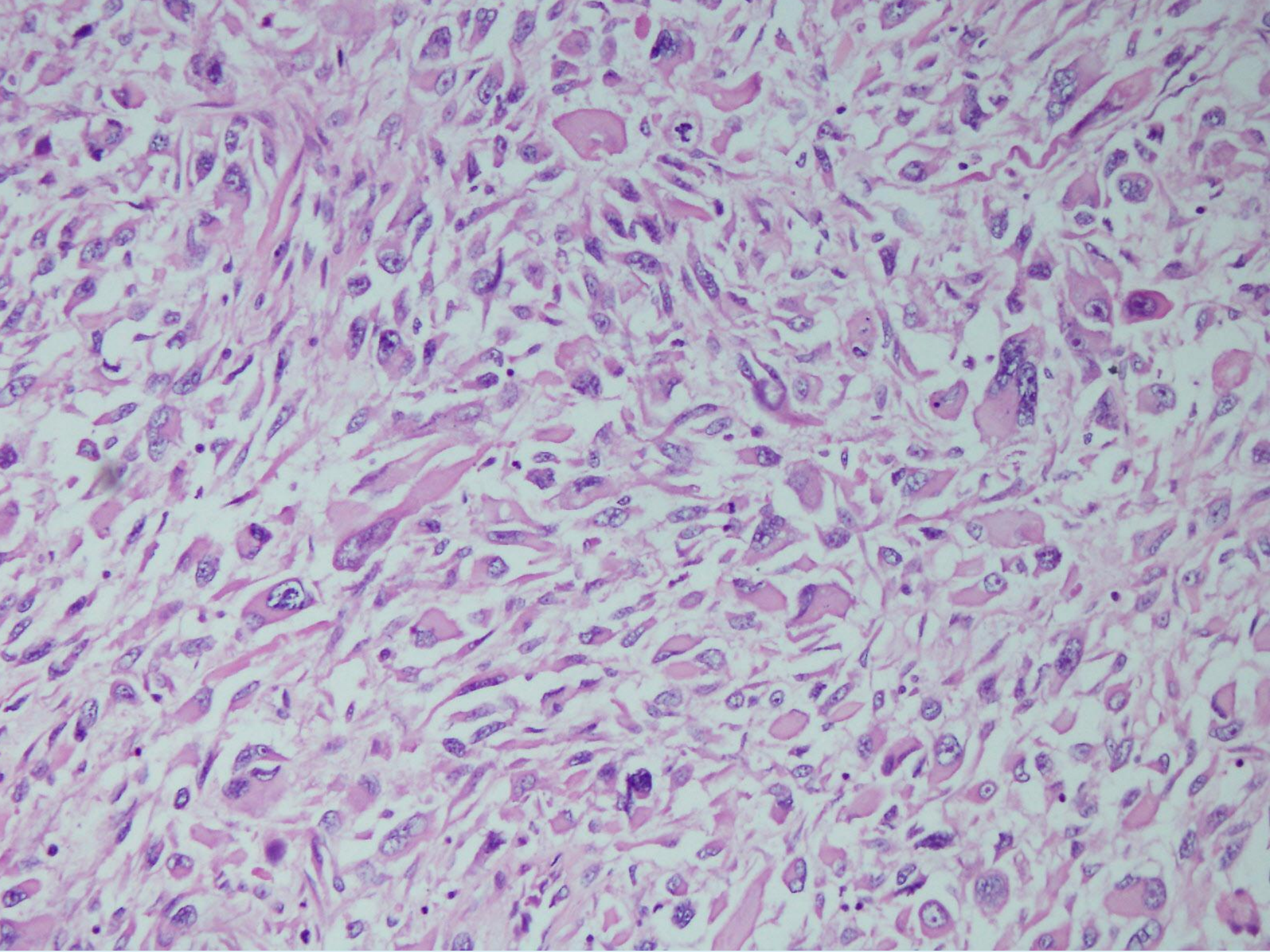


Pleomorfik rabdomyosarkom

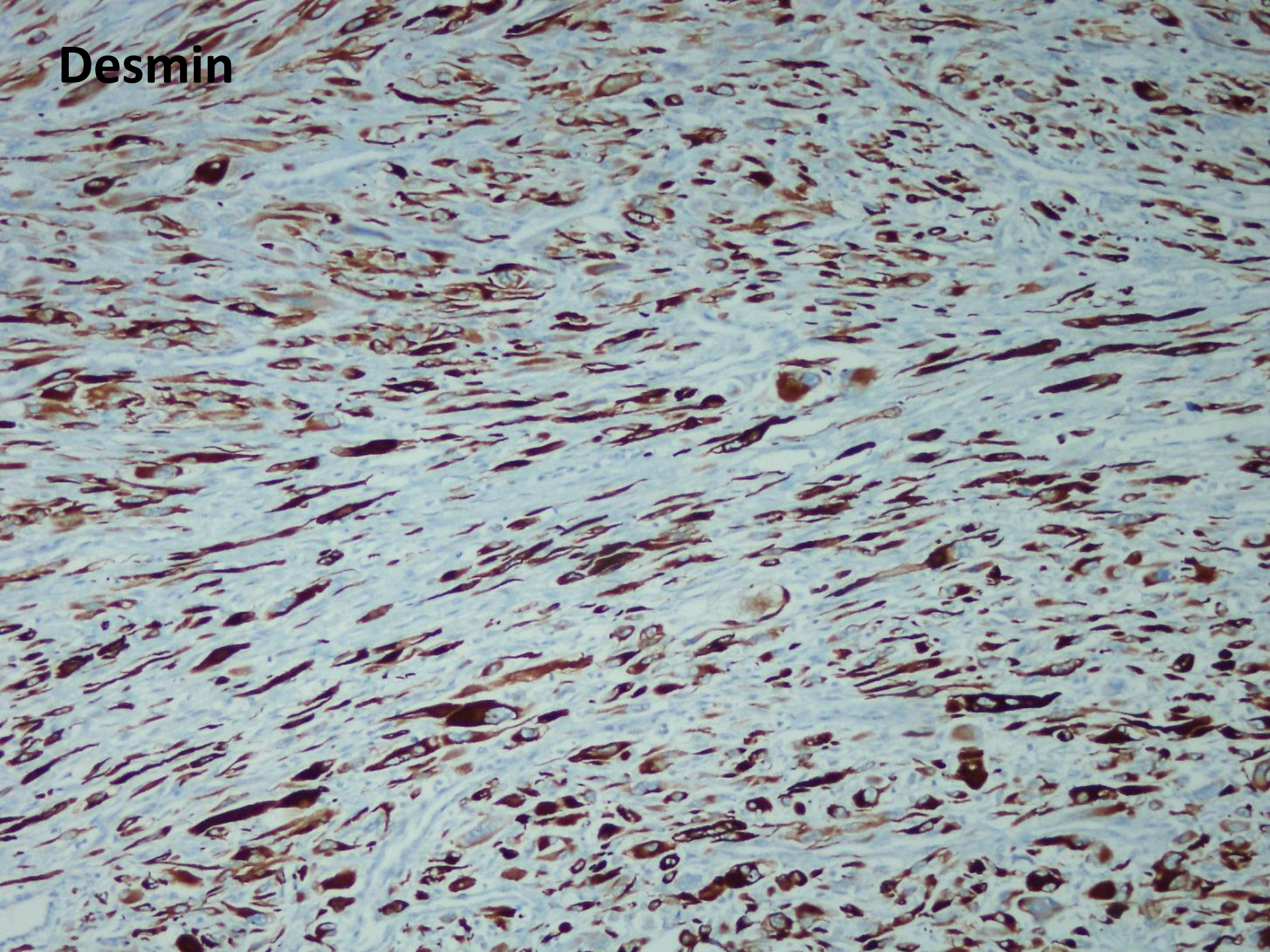
- Nadir ve hemen her zaman erişkinlerde
- Bizar pleomorfik poligonal veya iğsi atipik büyük hücrelerin düzensiz yığınları ile karakterli
- Pleomorfik nonspesifik sarkomdan farklı olarak hücrelerin çoğunda geniş parlak eosinofilik sitoplazmalarıyla rabdomyoblastik diferansiasyon görülebilir
- İmmunhistokimya (desmin ve myogenin) yardımcı
- Çocukluk çağında benzer morfolojideki örneklerin anaplastik varyant olması daha muhtemel olduğundan embriyonel ve/veya alveoler morfolojide alanlar araştırılmalıdır.



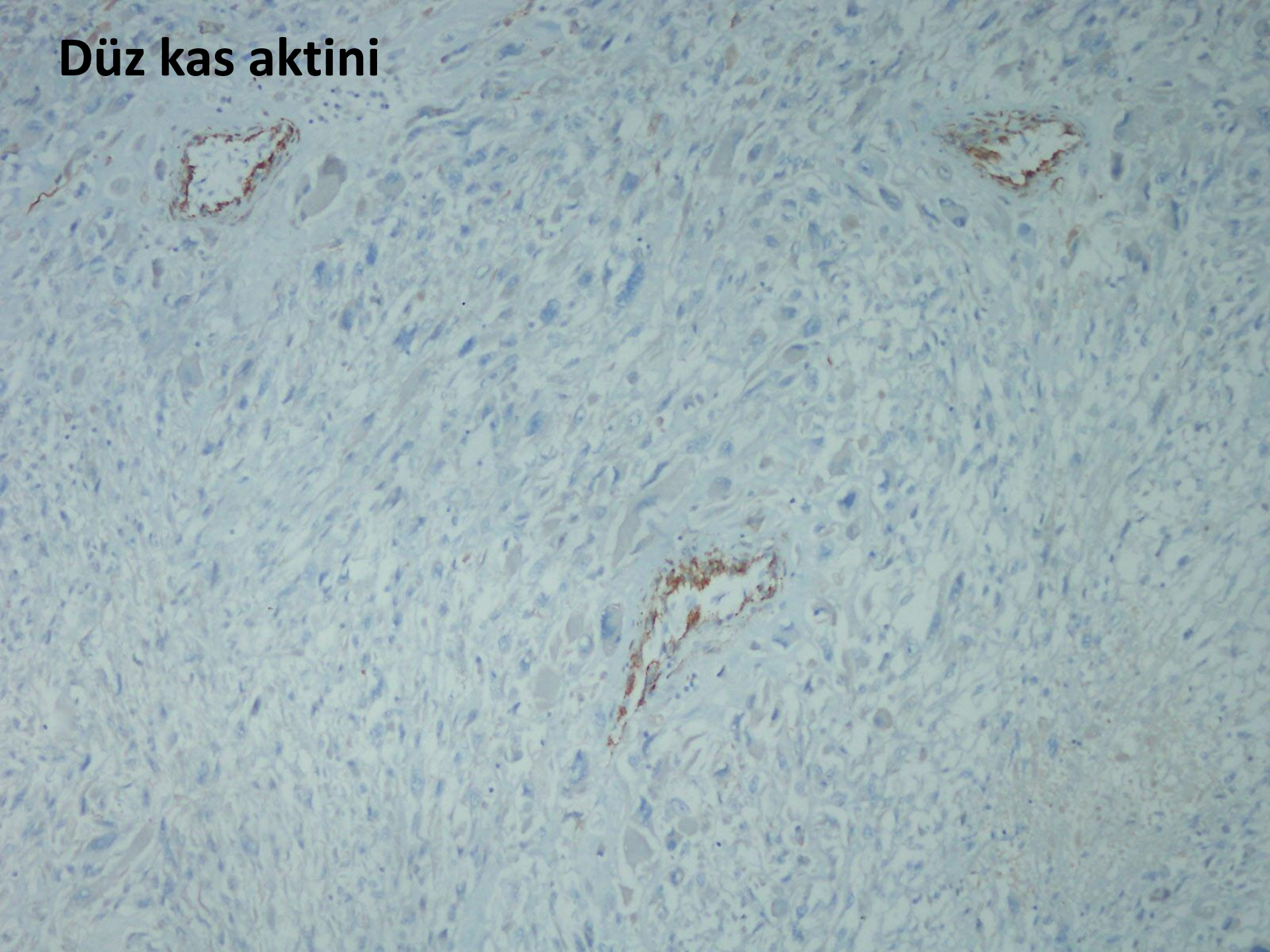




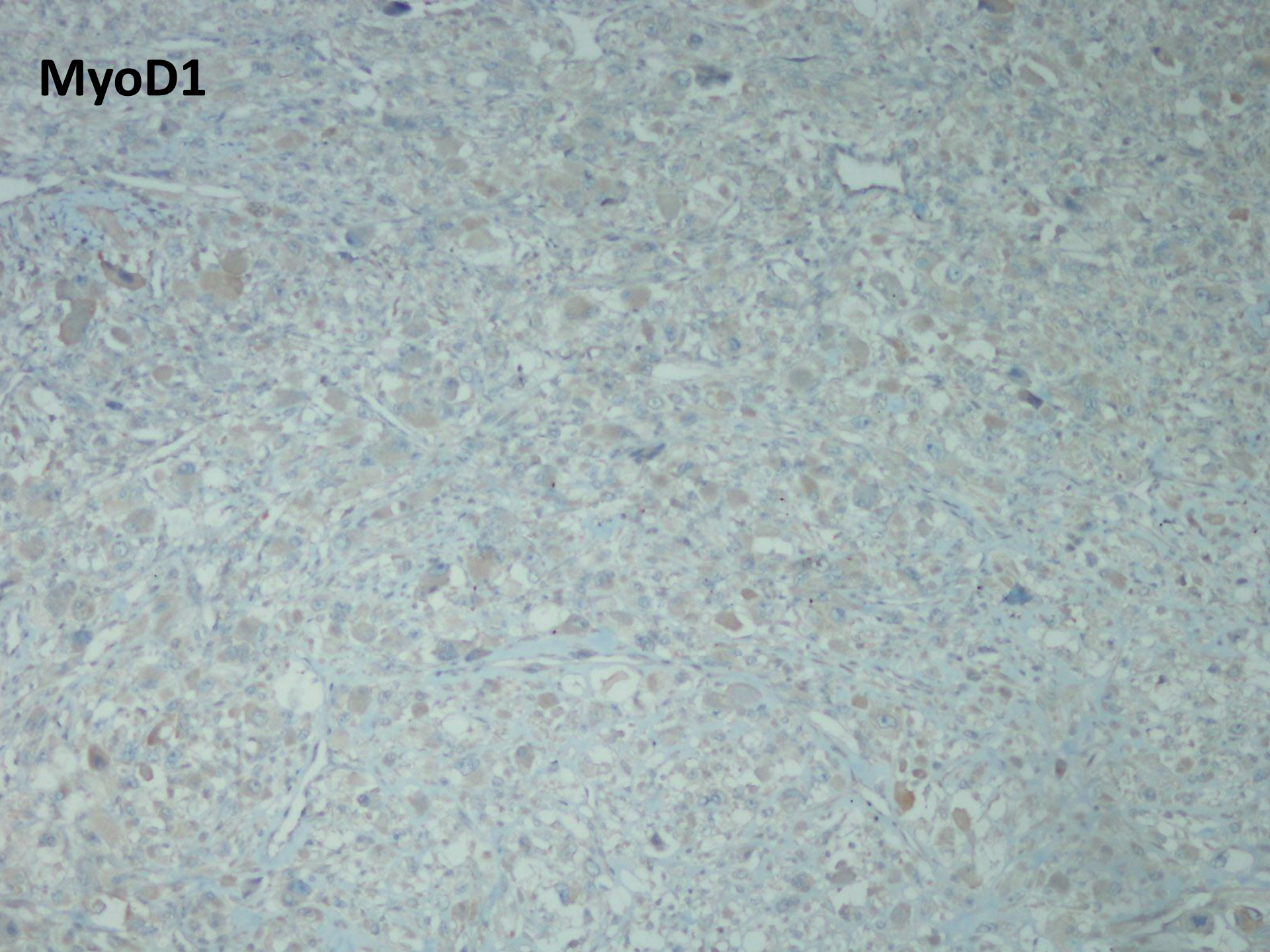
Desmin



Düz kas aktini



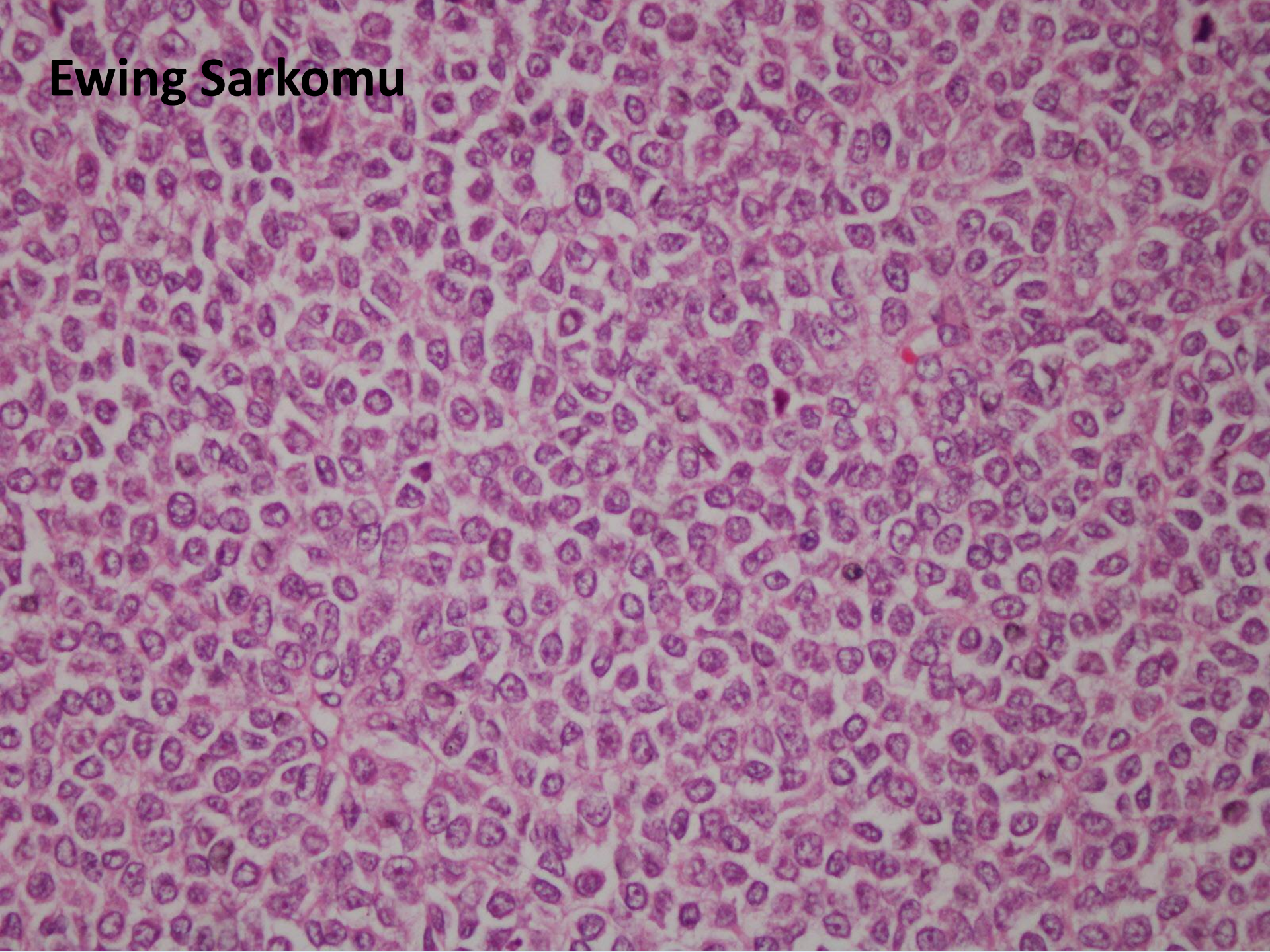
MyoD1



Rabdomyosarkom, ayırıcı tanı

- **Lenfoma** (yuvalar oluşturmayan monoton hücrelerin diffüz dağılımı, immunhistokimyasal belirteçler),
- **Ewing sarkom/PNET** (Hücreler görece daha üniform ve küçük, rozet formasyonu, CD-99 +, myogenin -),
- **Desmoplastik küçük yuvarlak hücreli tümör** (intraabdominal yerleşim, belirgin stromal fibroplazi, EMA ve desmin + , myogenin -)
- **Nöroblastom** (ilk üç yaş içinde, nörofibriler matriks varlığı, adrenal bez veya intraabdominal sempatik zincir bölgesinde, NB84 +),
- **Olfaktör nöroblastom** (sinonazal yerleşim, lobüler çatı, nörofibriler matriks, S-100 + sustentaküler hücreler, sinaptofizin +, desmin -),
- **Küçük hücreli/nöroendokrin karsinom metastazı** (ileri yaş, primer tümör hikayesi, nükleer yavaşmalar, sitokeratin +, desmin -)

Ewing Sarkomu



Rabdomyosarkom, prognoz

- Ortalama 5 yıllık sağkalım %70
- Çocuklarda sağkalım oranları daha yüksek (Botryoid ve iğ hücreli alt tiplerinde 5 yıllık sağkalım %90'dan fazla)
- Erişkin dönemde görülen rms lar genelde kemoterapiye duyarlılığı düşük olduğundan 5 yıllık sağkalım %20 civarında

ÖZET

- Retroperitoneal düz kas tümörü (kadınlarda ve ER-PR (+)) ~ uterus düz kas tümörü ?
- Kutanöz (Dermal) LMS = Atipik dermal düz kas tümörü ?
- Ayırıcı tanıda schwannom ve GİST i atlama
- RMS, çocuklarda, visserlerde, KT ye duyarlı
- Rabdomyosarkomda alveoler komponenti atlama
- Rabdomyosarkomda spesifik moleküler bulgu (+) ve prognozla ilişkili

