PHYLLODESTUMOROFTHEBREAST:ACASESERIES

ABSTRACT

Background: Phyllodes tumor is a rare fibroepithelial tumor of the breast comprising less than 1% of all breasttumors.Mostofthesetumorsarebenignbutsomehavemalignantpotential.Theaimofthestudywas to evaluate the clinical characteristics, treatment and post operative complications inpatientswithphyllodestumor.

Methods: ThisretrospectivestudywasconductedatAssamMedicalCollegeandHospital,Dibrugarhforadurationof1year(May2022toMay2023).Total12histologicallyconfirmedcasesofphyllodestumorwere includedinthestudyfromhospitalrecordsoftheinstitution.

Result: Themedianageofdiagnosisatthetimeofadmissionwas36yearswithagerangefrom13to49years.11outof12caseswerebenign,whereas1wasfoundtobeofborderlinemalignancy.Allpatientsunderwentoperative interventions-excisionof thetumorin8patients,simple mastectomyin3patientsandMRMinonepatient.Nopostoperativecomplicationsorrecurrencewereobserved duringtheperiodoffollowup.

Conclusion: Localexcisionofthetumoris adequateinallthebenignphyllodestumors,whereasborderlinephyllodesandmalignanttumorswerebesttreatedbysimplemastectomy.

Keywords: Phyllodes, Mastectomy, Breast

1. INTRODUCTION

Phyllodes tumor is a rare tumor of the breast in comparison to other histologic subtypes,however itself is not a rare tumor, accounting for <1% of all breast malignancies [1,2], and has anincidence of about 2.1 per million. Most of these tumors are benign, but some have a malignantpotential.Thesetumorscommonlyoccurinfemalesduringthe4thor5thdecadeoflife.Theycangrowrapidly and the associated symptoms can mimic other types of breast carcinoma, particularly if themass ulcerates and bleeds. Phyllodes tumor usually compresses the surrounding tissue from which itisusuallywelldemarcated.Thebulkofthistumorisconnectivetissuewithmixedgelatinouscysticandsolid areas[3], the number of mitoses may help in the diagnosis of the malignant subtype[4–6]. The onlytreatment option for these tumors is surgical removal[3]. Phyllodes tumors often present a diagnosticand treatment dilemma. The phyllodes tumors are classified into benign, borderline, and malignantcategoriesbasedonthedegreeofstromalcellularatypia,mitoticactivity,degreeofstromalovergrowth, tumor necrosis, and margin appearance. Borderline tumors have the greatest tendencyfor local recurrence[6,7]. All forms of phyllodes tumors have malignant potential[5]. A five-year survivalrate was observed in almost 100% of patients with benign tumors, 98% with borderline, and about88% with malignant[8]. Depending on malignant potential, bulky tumor, recurrence, and status ofresection margins, the treatment may vary between wide local excision with 1cm breast tissue orradiotherapy[10]. Revision surgery may be required for a high percentage of tumors with inadequatemargin removal, and radiotherapy after breast surgery may significantly reduce the local recurrencerateforborderlineandmalignant tumors[9,11].

2. CASE PRESENTATION :

A total of 12 cases were evaluated retrospectively from hospital register of Assam MedicalCollege & Hospital, who were clinico-pathologically diagnosed as phyllodes tumors. The duration ofstudywas1 year,fromMay'22toApril'23.Allcaseshadapalpablemassintheaffectedbreastbutnopalpableaxillary (except one case)orsupraclavicularlymphadenopathyatthetimeofpresentation.Ultrasonographyand chest x-ray radiography were performedin all the cases prior to surgery. Abdominalcomputed tomography (CT) scan wasperformed post-operatively for the borderline lesion to rule out any metastatic disease. Appropriate surgical plans wereformulated depending on the findings. Treatment modalities were excision of the tumor, simplemastectomyandmodifiedradicalmastectomy

(MRM)foronecaseonclinicalsuspicionofmalignancy.Nopostoperativecomplicationsorrecurrenceswereobservedinthefollowupnotes ofthepatients.

3. RESULTS

Table 1 Number of cases with phyllodes tumor

Sl. No.	Age	Presenting complaint	Side	HPE No.	Size	Operative procedure	aesthesia	Variety	complication
1.	31	Lump	Left	2441/22	14x13x10	MRM	GA	Benign	None
2.	18	Lump	Left	2762/22	5x4x3	Excision	GA	Benign	None
3.	35	Lump	Right	3604/22	15x14.5x11	Excision	GA	Benign	None
4.	45	Rapidly progressinglump	Right	4363/22	12x11x8	Simplemastectomy	GA	Benign	None
5.	23	Lump	Bilateral	747/23	L=2x1.5x1.5 R=2.5x2x2	Excision	GA	Benign	None
6.	49	Lump	Right	1895/23	9x7.5x4	Excision	GA	Benign	None
7.	16	Lump	Right	2341/23	6x4x3	Excision	GA	Benign	None
8.	13	Lumpwith Pain	Left	2371/23	13x12x6	Simple Mastectomy	GA	Borderline	None
9.	39	Lump	Right	2495/23	6x4x4	Excision	GA	Benign	None
10.	37	Lump	Left	2511/23	10x10x8	Excision	GA	Benign	None
11.	28	Rapidly progressinglump	Left	3151/23	16x16x8	Simplemastectomy	GA	Benign	None
12.	31	Lump	Left	3702/23	3x1.5x1.5	Excision	GA	Benign	None

Table 2 Common presenting complaints withwhich patient presented tooutpatient department (OPD).

Sl.No.	Presentingsymptom	Numberofcases	Percentage
1.	Slowlyprogressingswelling	9	75%
2.	Rapidlyprogressingswelling	2	17%
3.	Pain	1	8%
4.	Skinchanges	0	0

Themedianageatdiagnosiswas36years(range13-49years).11(92%) out of12tumorswerebenign and1(8%)wasborderline.In6(50%)ofthecases,thetumorwasontheleftside,5(42%)ontherightside and 1 (8%) was bilateral. All the cases the patient presented with a breast lump of which only

1(8%)presentedwithpainoverthelump.Rapidgrowthofthebreastlumpwasnotedin2(17%)ofthecases.Excisionofthebreastlumpwasthetreatmentofchoicein8(67%)ofthecaseswhereassimplemastectomy was performed in 3 (25%) of the cases presenting with rapid growth of the breast lump.In 1 (8%) case modified radical mastectomy (MRM) was performed on the basis of clinical suspicionfor malignancy. All interventions (100%) weredoneundergeneralanesthesia. No post-operativecomplicationswere documented intherecords.

FIGURE1 Pie chart showing Age Distribution

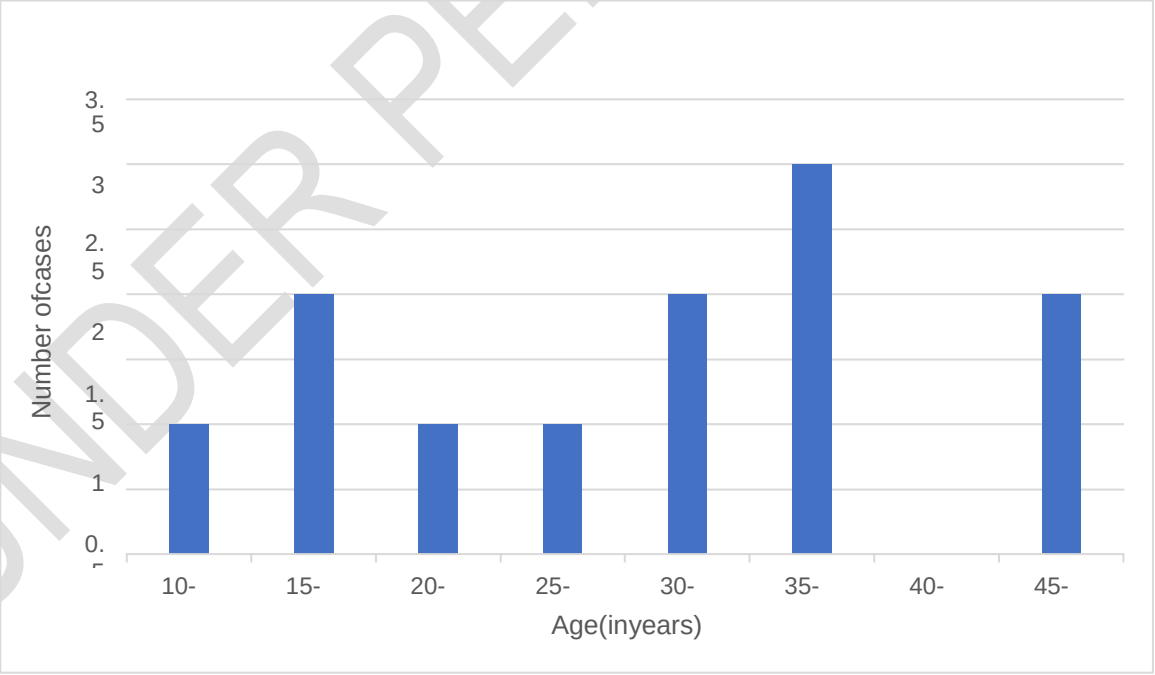

FIGURE2Pie chart showingSide distribution

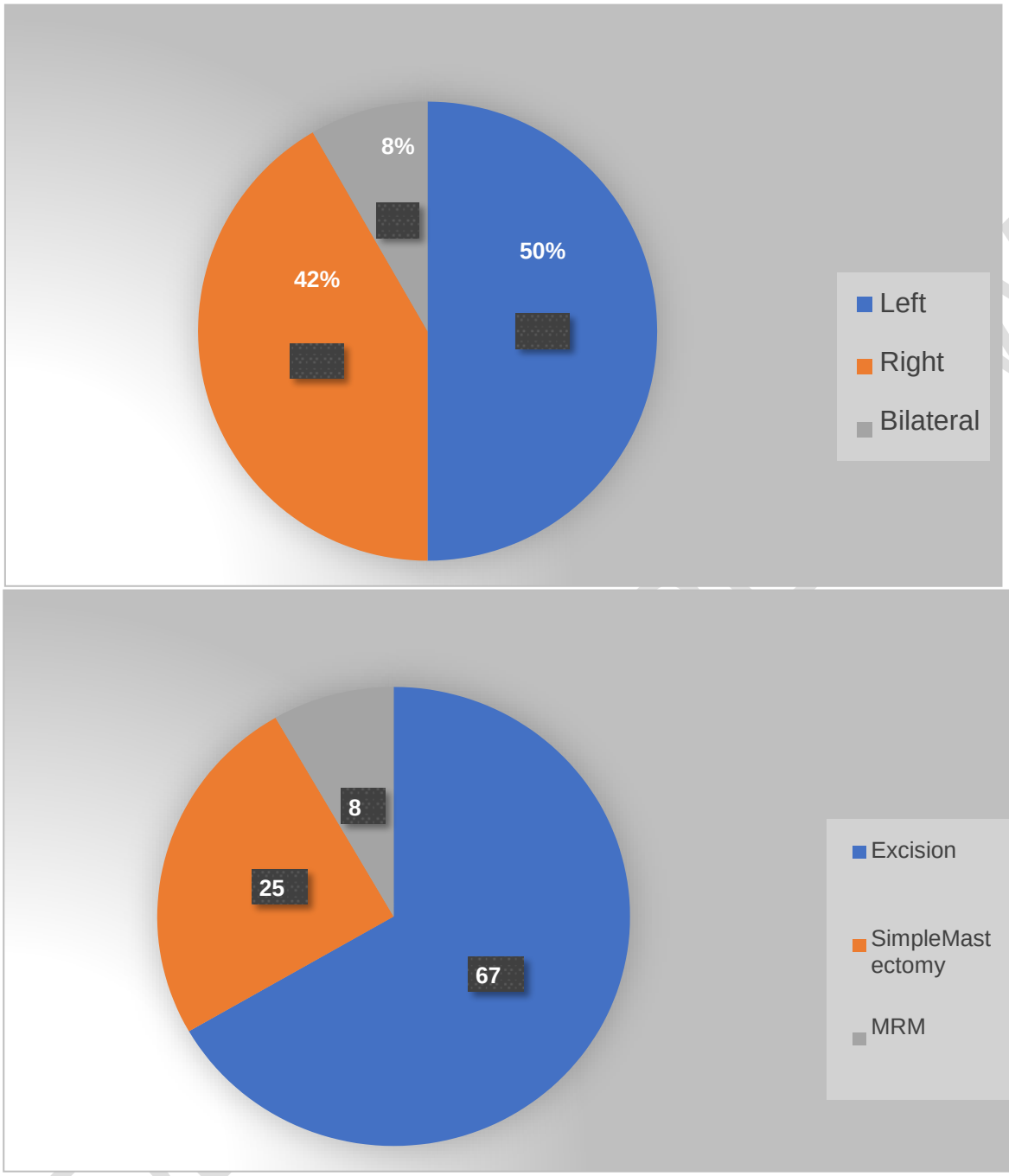

FIGURE3Pie chart showingTreatmentdistribution

4. DISCUSSION

Phyllodestumorsarerare,representingonly0.3%to0.9%ofallbreasttumors[12,13].Phyllodestumors occur at any age, from 10 to 90 years [13,14,15], with a peak incidence between 30 and 40 years(a decade later than the average presentation of fibroadenoma). A breast lump is the most commonpresenting symptom, representing up to 90% of cases [16,17]. It is common for a “fibroadenoma” to bereclassified as a phyllodes tumor after excision of the mass. In the study by Hassouna et al [46], 106patientswithphyllodestumorwerereviewed,retrospectively.Theyreportedonly9patientswiththehistory of a benign breast lump, and 7 cases were confirmed as fibroadenomas. 37% of the patientswithphyllodestumorhadthehistory offibroadenoma[47]. In our study out of 12 cases, 8(67%) were preoperatively diagnosed as fibroadenoma and only 4 cases were labelled as phyllodes tumor which includes the borderline phyllode and axillary lymphadenopathy case.

The diagnosis of phyllodes tumor is difficult since the rapid growth and/or large size ofapparent fibroadenoma may be the only imaging findings suggestive of phyllodes tumor. Phyllodestumoroften mimicsfibroadenomaatmammography[48,49].

In the literature, the tumor size varies between 5 and 270 mm, with a mean size between 50and72mm[14,19–21].Historictumorswithasizereachingupto450mmhavebeendescribed[17,22].

Phyllodestumorsareunilateralin96%ofcaseswithveryfewcasesofbilateralityreported[23–25].AfewcasesofPTarisingwithinectopicmammary tissuehave beenreported intheaxillaandvulva[26–28].Inourstudy,only1caseofbilateralPTwasfound.

In1996,Libermanetal[29]concludedintheirstudyof51 phyllodestumors,thatatumorwithamammographicdiameterof30mmorgreaterappears tobeassociatedwitha higherlikelihoodof malignancy. Conversely, Jorge Blanco et al [30] found in their series of 154 cases that the mean size onmammographywas 41mmand90mmin malignantandbenignphyllodestumor,respectively.

Surgery is the mainstay of treatment for phyllodes tumors, but the extent of surgery remainscontroversial,particularlyforborderlineandmalignantphyllodestumor.Regardlessoftheirhistology,allphyllodestumorcanrecur,althoughtheriskoflocal recurrenceislowinbenignforms,rangingfrom4.7%to30%,andnotablyhigherinborderlineandmalignantforms(30%–65%)[31,32].Intheliterature,most authors agree that the correct procedure for benign phyllodes tumor is a wide local excisionallowing a 1 to 2 cm margin in all directions [32,33]. On the contrary, Zurrida et al [34], in their largestseries, concluded that when benign phyllodes tumor is encountered unexpectedly, a wait-and-seepolicy is justified because of the low local recurrence rate of benign phyllodes tumor and the rarity ofpreoperative diagnosis [35,36]. In the past, the treatment of choice for borderline and malignantphyllodestumorwassimpleorradicalmastectomy.Currently,mostauthorsfavorconservativesurgery because local recurrences do not appear to be related to the systemic spread of the disease [37].Conversely, Barth [32] in a large review of the literature found that the recurrence rate was as high as46% and 65% after local excision for borderline and malignant phyllodes tumor, and these ratesremained high even after wide local excision (29% and 36%). In contrast, Asoglu et al [38] found nosignificantdifferenceintermsoflocalcontrolwhenwidelocalexcisionormastectomywasperformedforbenignandmalignant forms.

Manyauthorsconsiderthataxillarylymphnodedissectionisnotuseful,whereasotherspreferto use it only in cases of clinically suspect adenopathy or invasive carcinoma within phyllodes tumor.Mataretal[18]in1995observed3casesoflymphnodeinvolvementamong9lymphnodeclearances,whereas Kapiris et al [39] in 2001 showed no lymph node invasion among 21 patients with malignantphyllodes tumor undergoing lymph node dissection. According to Rowell, Cohn, and Norris [13,40,41], of10% to 15 % of patients presenting with clinical axillary adenopathy, less than 1% had pathologicalnodes. In our series, 1 case had breast mass with axillary lymphadenopathy, for which she was operated by simple mastectomy on clinical suspicion. However, the histopathological examination showed phyllodes tumor with reactionary lymphadenitis of the axillary lymph nodes.

The frequency of local recurrences varies between 0% and 60% according to various series inthe literature [21,33,37,38,42,43]. According to some authors, malignant phyllodes tumor recur in 24% to58% of cases, whereas benign phyllodes tumor recur only in 4.3% to 27% of cases [14,20,33,38]. Otherfactors are identified to be risk factors for local recurrences such as surgical margins, nuclear atypia,and stromal overgrowth [33,37]. Recurrence histotypes are generally identical to the primary tumor.However, sarcomatous transformation can occur during recurrence after resection of benignorborderline phyllodes tumor [44]. Reinfuss et al [33] explains this transformation by the existence ofmalignantfocithat mighthavebeenmissedonpathologic examination.

Thedistantmetastasesratevariesconsiderably,from6.6%to70%,andmostofthemoccurinlung (84.5%) and bone (39%) [33,39]. Moffat et al [37] report that patients with local recurrence do notdevelopdistantmetastases.Onthecontrary,Kapirisetal[39],Hajduetal[44],andWestetal[45]showedthatamongpatientshavingmetastases,60%to85%hadalreadydevelopedlocalrecurrences.

The5-yeardisease-freeandoverallsurvivalvaries,accordingtootherseries,rangingfrom60% to 92% [32,39]

In our series, there was no documentation of any recurrence. However, no proper Inferencecanbedrawnfromthisduetoshort followupperiodofthecases.

5. CONCLUSION

Phyllodes tumor represents a heterogenous group of tumors sharing the same macroscopicfeatures with that of a fibroadenoma. Their prognosis depends on the histological and biologicalcharacteristics of the tumors rather than their clinical behaviour. The data concerning the prognosticfactors of phyllodes tumor are conflicting, and further studies are warranted. Surgery remains thecornerstoneoftreatment.

6. LIMITATIONS OF THE STUDY

The main limitation of this study are inclusion of small number of cases and short duration of follow up.

7. ETHICAL CLEARANCE

Takenfrominstitutionalethicscommittee.

9.REFERENCES

1. YoheS,YehIT."Missed"diagnosisofPhyllodestumoronbreastbiopsy: pathologicalcluestoits recognition.*IntJSurgPathol"*2008;16(2):137–42.doi:10.1177/1066896907311378.
2. Farias-Eisner GT, Small K, Swistel A, Ozerdem U, Talmor M. Immediate Implant BreastReconstruction with Acellular Dermal Matrix for Treatment of a Large Recurrent Malignant PhyllodesTumor.*AestheticPlastSurg.* 2014;38(2):373–8.doi: 10.1007/s00266-014-0283-9.
3. LanninDR,GeibelJ.*CystosarcomaPhyllode's.*2014.
4. Kumar T, Patel MD, Bhargavan R, Kumar P, Patel MH, Kothari K, et al. Largest Phyllodes Tumor-Case Report and Brief Review Article. *Indian J Surg Oncol.* 2011;2(2):141–4. doi: 10.1007/s13193-011-0077-3
5. MoffatCJ,PinderSE,DixonAR,ElstonCW,BlameyRW,EllisIO.Phyllodestumourofthebreast:aclinicopathologicalreviewofthethirty-twocases.*Histopathology.* 1995;27(3):205–18. doi:10.1111/j.1365-2559.1995.tb00212.x
6. Rowell MD, Perry RR, Jeng-Gwang H, Barranco SC. Phyllodes tumors. *Am J Surg.* 1993;165:376–9.doi: 10.1016/S0002-9610(05)80849-9.
7. Khan SA, Badve S. Phyllodes tumors of breast. *Curr Treatoptions Oncol.* 2001;2:139–47.doi: 10.1007/s11864-001-0056-y.
8. YeJohnShangmingSevenLakesHighSchool,Katy,TX.Statisticalanalysisonthebehaviorandrecurrenceofbreastphyllodestumors.*JClinOncol.*2016;34(suppl3)
9. Tan PH1, Thike AA, Tan WJ, Thu MM, Busmanis I, Li H, et al. Predicting clinical behaviour of breastphyllodestumours:anomogrambasedonhistologicalcriteriaandsurgicalmargins.*JClin Path.*2012;65(1):69–76.doi:10.1136/jclinpath-2011-200368.
10. Liang MI, Ramaswamy B, Patterson CC, McKelvey MT, Cordillo G, Nuovo GJ, et al. Giant breasttumors:surgicalmanagementofphyllodestumors,potentialforreconstructivesurgeryandreviewofliterature. *World JSurg Oncol.* 2008;6:117.doi:10.1186/1477-7819-6-117.
11. Barth RJ, Jr, Wells WA, Mitchell SE, Cole BF. A prospective, multi-institutional study of adjuvantradiotherapy after resection of malignant phyllodes tumors. *Ann Surg Oncol.*

2009;16(8):2288–94.doi: 10.1245/s10434-009-0489-2.

12. AzzopardiJG.SarcomaoftheBreast.Philadelphia:WBSaundersCo;1979:355–9.

13. RowellMD,PerryRR,HsiuJG,BarrancoSC.Phyllodestumors.AmJSurg1993;165:376–9.

14. TanPH,JayabaskarR,ChuahKL,etal.Phyllodestumorsofthebreast:theroleofpathologicparameters.AmJClinPathol2005;123: 1–12.

15. ErogluE,IrkkanC,OzsoyM,ErogluF.Phyllodestumorofthebreast:caseseriesof40patients.EurJ Gynaecol Oncol2004;25:123–5.

16. PandeyM,MathewA,KattoorJ,etal.Malignantphyllodestumor.BreastJ2001;7:411–6.

17. RajanPB,CranorML,RosenPP.Cystosarcomaphyllodesinadolescentgirlsandyoungwomen:a studyof45patients.AmJSurgPathol1998;22:64–9.

18. MatarN,SoumaniA,NounM,etal.[Phyllodestumorsofthebreast.Fortyonecases.]JGynecolObst et Biol Reprod(Paris)1997;26: 32–6.

19. IsotaloPA,GeorgeRL,WalkerR,SenguptaSK.Malignantphyllodestumorwithliposarcomatousd ifferentiation.ArchPathol LabMed 2005;129:421–2.

20. HernanzF,AlvarezA,OrtegaE,GarijoF.Malignantcystosarcomaphyllodesofthebreasttreatedwithoncoplastic conservativesurgery.Breast J2005;11:146.

21. MokbelK,PriceRK,MostafaA,etal.Phyllodestumourofthebreast:aretrospectiveanalysisof30cases.Breast1999;8:278–81.

22. HinesJR,GeurkinkRE.Giantbreasttumorintheadolescent.AmJSurg1965;109:810–3.

23. BaderE,IsaacsonC.Bilateralmalignantcystosarcomaphyllodes.JSurgRes1961;48:519–21.

24. BallAB,FisherC.Bilateralmalignantphyllodestumours.JSurgOncol1991;46:67–9.

25. Vorherr H, Vorherr UF, Kutvirt DM, Key CR. Cystosarcoma phyllodes: epidemiology,pathohistology,pathobiology,diagnosis,therapy,andsurvival.ArchGynecol1985;236:173–81.

26. ChuliaMT,PayaA,NiveiroM,etal.Phyllodestumorinectopicbreasttissueofthevulva.IntJSurg Pathol2001;9:81–3.

27. OshidaK,MiyauchiM,Yamamoto N,etal.Phyllodestumorarisinginectopicbreasttissueoftheaxilla.BreastCancer2003;10:82–4.

28. TbakhiA,CowanDF,KumarD,KyleD.Recurringphyllodestumorinaberrantbreasttissueofthevulva.AmJ Surg Pathol 1993;17: 946–50.

29. LibermanL,BonaccioE,Hamele-BenaD,etal,Benignandmalignantphyllodestumors:mammographic andsonographic findings.Radiology 1996;198:121–4.

30. JorgeBlancoA,VargasSerranoB,RodriguezRomeroR,MartinezCendejasE.Phyllodestumorsofthebreast.EurRadiol 1999;9: 356–60.

31. BartoliC,ZurridaS,VeronesiP,etal.Smallsizedphyllodestumorofthebreast.EurJ SurgOncol1990;16:215–9.

32. BarthRJJr.Histologicfeaturespredictlocalrecurrenceafterbreastconservingtherapyofphyllodestumors.Breast CancerRes Treat 1999;57:291–5.

33. ReinfussM,MitusJ,DudaK,etal.Thetreatmentandprognosisofpatientswithphyllodestumorofthebreast: ananalysisof170cases.Cancer1996;77:910–6.

34. ZurridaS,BartoliC,GalimbertiV,etal.Whichtherapyforunexpectedphyllodetumourofthebreast? EurJ Cancer1992;28:654–7.

35. CosmaciniP,ZurridaS,VeronesiP,etal.Phyllodetumorofthebreast:mammographicexperiencei n99cases.EurJ Radiol 1992;15: 11–4.

36. JayaramG,SthaneshwarP.Fine-needleaspirationcytologyofphyllodestumors.DiagnCytopathol2002;26:222–7.

37. MoffatCJ,PinderSE,DixonAR,etal.Phyllodestumoursofthebreast:aclinicopathologicalreviewo fthirty-twocases.Histopathology 1995;27:205–18.

38. AsogluO,UgurluMM,BlanchardK,etal.Riskfactorsforrecurrenceanddeathafterprimarysurgical treatmentofmalignantphyllodestumors.AnnSurg Oncol2004;11:1011–7.

39. KapirisI,NasiriN,A'HernR,etal.Outcomeandpredictivefactorsoflocalrecurrenceanddistantmet astases following primary surgical treatment of high-grade malignant phyllodes tumours of thebreast.EurJ SurgOncol2001;27:723–30.

40. Cohn-CedermarkG,RutqvistLE,RosendahlI,SilfverswardC.Prognosticfactorsincystosarcomaphyllo des.Aclinicopathologic studyof77patients.Cancer1991;68:2017–22.

41. NorrisHJ,TaylorHB.Relationshipofhistologicfeaturestobehaviorofcystosarcomaphyllodes.An alysisofninety-fourcases.Cancer1967;20:2090–9.

42. CarterBA,PageDL.Phyllodestumorofthebreast:localrecurrenceversusmetastaticcapacity.Hu mPathol2004;35:1051–2.

43. HalversonJD,Hori-RubainaJM.Cystosarcomaphyllodesofthebreast.AmSurg1974;40:295–301.

44. HajduSI,EspinosaMH,RobbinsGF.Recurrentcystosarcomaphyllodes:aclinicopathologicstud yof32cases.Cancer1976;38:1402–6.

45. WestTL,WeilandLH,ClagettOT.Cystosarcomaphyllodes.AnnSurg1971;173:520–8.BenHassounaJ,DamakT,GamoudiA,etal.Phyllodestumorsofthebreast:acaseseriesof106p atients.AmJ Surg2006;192: 141-147.

46. BarrioAV,ClarkBD,GoldbergJIetal.Clinicopathologicfeaturesandlong-termoutcomesof293phyllodestumorsofthebreast.AnnSurg Oncol2007; 14:2961-2970

47. FoxcroftLM,EvansEB,PorterAJ.Difficultiesinthepre-operativediagnosisofphyllodestumorsofthebreast: astudyof84cases.Breast2007; 16: 27-37

48. JacklinRK,RidgwayPF,ZiprinP,HealyV,HadjiminasD,DarziA.Optimisingpre-operativediagnosisinphyllodestumourofthebreast.JClinPathol2006;59:454-459.