

Giant juvenile fibroadenoma mammae case report

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ABSTRACT

Mammae fibroadenoma (FAM) is a benign breast tumor with a mass consisting of epithelial tissue and stroma located under the skin of the breast. Fibroadenomas are mostly experienced in young women aged 10-18 years. The cause is not yet known for sure, but it is suspected that an increase in hormones occurs at a young age. FAM which is rapidly enlarged in size with a tumor diameter of more than 5 cm and weighs more than 500 grams is called Giant Juvenile Fibroadenoma. Characteristics of Giant Juvenile Fibroadenoma Mammae, although it is a benign tumor, can compress the surrounding tissue and change the structure of the lobules due to its increase in size and vascularization, and is at risk of leading to malignancy indicators. The case report reported one case in an 11-year-old girl with a major complaint of a lump in the left breast, rapidly enlarging over the past 6 months before being admitted to hospital. Preoperative cytology using Fine Needle Aspiration (FNA) showed the presence of Giant Juvenile Fibroadenoma (GJF) Mammae. The patient was given wide excision surgery with a surgical margin of 1 cm followed by a mastectomy procedure. A tumor measuring 7 x 7 cm was obtained with hypervascularization. Histopathological reports show benign juvenile giant fibroadenoma mammae with negative margins. At follow-up up to 6 months, there were no signs of recurrence on physical examination and ultrasonography.

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INTRODUCTION

Mammae fibroadenoma (FAM) is a benign breast tumor with a mass consisting of epithelial tissue and stroma located under the skin of the breast (Sukmawati et al., 2024). Fibroadenomas are common in younger women, generally occurring in children and adolescents. In children and adolescents, mammal fibroadenoma often occurs at the age of 10 - 18 years. Palpable breast mass at that age represents 30 - 50%, and about 44 - 94% of the breast mass excised surgically in the same age group (Bardisi, Ekhlash S; Smeets, Ann; Floris et al., 2021; Eleftheriades et al., 2023; Johnny A, 2023; Juarez et al., 2021).

The exact cause of fibroadenoma mammae (FAM) is not yet known, but it is suspected that there is an increase or activity of hormones, especially the hormone estrogen which plays an important role in the development and growth of breast tissue during puberty, which is one of the factors that cause FAM to be more dominant in young women (Dzikrullah & Iskandar, 2022; Eleftheriades et al., 2023; Moukit et al., 2024; Sukmawati et al., 2021). FAM is often small (<3cm) but the growth of the tumor can be rapid and enlarged in size called Giant Juvenile Fibroadenoma (GJF) Mammae. Fibroadenoma can be categorized as Giant Juvenile Fibroadenoma Mammae when the diameter of the tumor exceeds 5 cm, weighs more than 500 grams or occupies more than four-fifths of the breast (Bardisi, Ekhlash S; Smeets, Ann; Floris et al., 2021; Dzikrullah, F.A., & Iskandar, 2022; Juarez et al., 2021; Sukmawati, 2019; Sukmawati et al., 2023).

Giant Juvenile Fibroadenoma Mammae is a benign tumor, but with the characteristics of rapidly enlarging, it can compress the surrounding tissue and change the structure of the lobules due to its increase in size and vascularization, and is at risk of leading to malignancy indicators (Bardisi, Ekhlash S; Smeets, Ann; Floris et al., 2021; Kar & Arora, 2023). The mass can compress nearby tissues, damage the lobular architecture, and cause peau d'orange, nipple retraction, skin hollows (dimpling), or superficial vein dilation due to increased size (Johnny A, 2023; Juarez et al., 2021; Sudula et al., 2022). Establishing the diagnosis of this disease requires a comprehensive approach with proper physical examination and several supporting examinations can be performed such as mammography, ultrasound (USG), biopsy, and magnetic resonance imaging (MRI) which are useful for assessing mass characteristics, and helping to distinguish between benign and malignant lesions (Kitazawa et al., 2022; Moukit et al., 2024; Zeeshan et al., 2021).

The main treatment of Giant Juvenile Fibroadenoma (GJF) Mammae is surgery. Surgical excision is usually necessary because the fibroadenoma mass will continue to enlarge and can cause pain, as well as the risk of malignant lesions. Indications of excision at a young age are also considered to maintain lactation ability, minimize injury to the breast, maintain the development of the breast parenchyma, lower compression on normal breast tissue, and good cosmetic results are also of paramount importance (Bardisi, Ekhlash S; Smeets, Ann; Floris et al., 2021; Du et al., 2020; O.J. Uchendu et al., 2024).

Proper education to patients and families is also important to help them understand the condition, the treatment process, and its prognosis. Family involvement in the treatment process can also provide strong emotional support for patients, ultimately contributing to a better recovery (Baral et al., 2020; Du et al., 2020). This case report provides information on understanding fibroadenoma, the characteristics of Giant Juvenile Fibroadenoma (GJF) Mammae so that health care workers can diagnose early accurately, provide appropriate management, and prevent further complications.

The urgency of the research is case report provides information on understanding fibroadenoma, the characteristics of Giant Juvenile Fibroadenoma (GJF) Mammae so that health care workers can diagnose early accurately, provide appropriate management, and prevent further complications. Objectives this research is find out giant juvenile fibroadenoma mammae and benefits of the research. With this research, it is hoped that it can provide knowledge and insight regarding giant juvenile fibroadenoma mammae.

RESEARCH METHOD

This type of research is a case study (Arikunto, 2019; Sugiyono, 2019). The subject of this case is an 11-year-old adolescent girl. The author has obtained informed consent which has been signed by the subject and the patient's parents. The data sources for this research are primary data and secondary data. Primary data comes from interviews, physical examination and observation sheets. Secondary data using medical records, journals and books. The data analysis techniques used are organizing data into categories, breaking it down into units, synthesizing it, arranging it in patterns, choosing what is important to study, and drawing conclusions.

RESULTS AND DISCUSSIONS

An 11-year-old girl came to the hospital complaining of a lump in her left breast, which has been rapidly enlarging over the past 6 months. The patient had no previous history of tumors. Family history of tumors is rejected. A general physical examination shows no abnormalities. The tumor on the right breast is greatly enlarged by about 7×7 cm with a changed contour, soft, round or oval shape, smooth, well defined, moving, and the areola complex of the nipple is enlarged (Figure 1). There is tension and distension of the veins in the skin that is lying too down (Figure 2). In the axilla, supraclavicle or subclavicle region, the enlargement of the lymph nodes is not palpable. Preoperative cytology using Fine Needle Aspiration (FNA) showed the presence of Giant Juvenile Fibroadenoma (GJF) Mammae. Chest X-ray examination and abdominal ultrasound did not produce any signs of metastasis. Blood tests and routine blood chemistry are within normal limits.



Figure 1. Tumors on the right breast was hugely enlarged approximately 7×7 cm



Figure 2. There was tension and venous distension of the overlying skin

The patient underwent a wide excision with a surgical margin of 1 cm followed by a mastopexy procedure (B. Figure 3). We obtained a 7×7 cm tumor with hypervascularization (Figure 4). Histopathological reports show benign juvenile giant fibroadenoma mammae with negative margins. At follow-up up to 6 months, there were no signs of recurrence on physical examination and ultrasound.

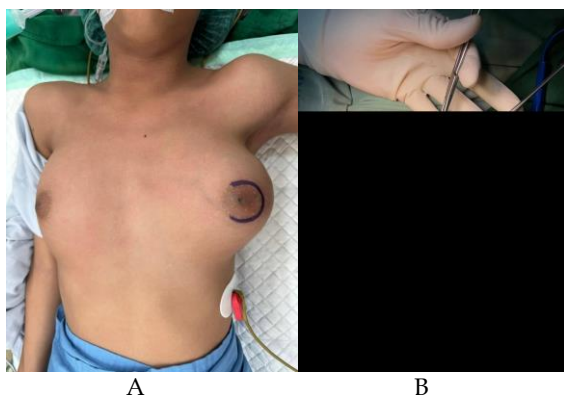


Figure 3. A. Pre-operation, B. Intra-operation, C. Post-operation

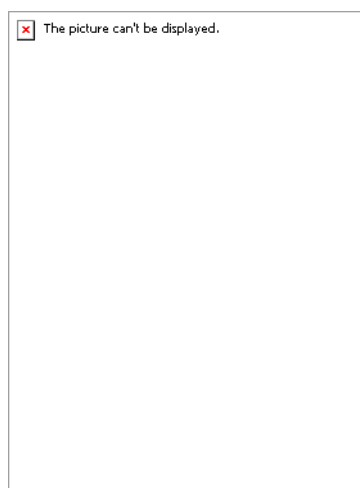


Figure 4. Intra operative image of excised tumor measuring 7 × 7 cm

Discussions

The case report described an 11-year-old girl with complaints of a lump on her left breast that had rapidly enlarged over the past 6 months. Giant Juvenile Fibroadenoma (GJF) Mammae is a benign tumor consisting of epithelial and stromal tissue with a tumor size of more than 5 cm or a weight of more than 500 grams and is characterized by rapid growth. According to the WHO, these tumors are commonly found in children and adolescents between the ages of 10 and 18. These tumors are usually unilateral, in the form of dense lumps, and are firmly bounded (Bardisi, Ekhlasi; Smeets, Ann; Floris et al., 2021; Eleftheriades et al., 2023; Juarez et al., 2021).

Giant Juvenile Fibroadenoma Mammae is a rare fibroadenoma variation that is about 0.5%-2% of all fibroadenomas and is characterized by rapid growth. The peak incidence occurs in late adolescence, ages 10 to 18, with a higher risk in African-American women than in Asia (Dasgupta et al., 2022; Johnny A, 2023; Zhang et al., 2023). Fibroadenomas represent 30 - 50% of palpable breast mass during childhood and adolescence and 44 - 94% of surgically excised breast mass in the same age group. Data on fibroadenomas in Indonesia are still limited, but it is estimated that in 2011 there were 100 people who had been affected by benign breast tumors. The change towards malignancy in fibroadenomas is less than 0.3%. However, the recurrence rate was about 33% after 5 years of follow-up (Eleftheriades et al., 2023; Sudula et al., 2022).

The patient had no previous history of tumors. The patient's family history of tumors was rejected. The exact cause of fibroadenoma is not yet known, but there are hormonal factors that affect tumor growth, including caused by increased estrogen levels during adolescence, related to

increased sensitivity of breast tissue (Gaonkar et al., 2023; Sirigere et al., 2021). Overstimulation of endogenous or exogenous estrogens, hypersensitivity of mammary gland tissues to local estrogens, and relative deficiencies of estrogen antagonists such as progesterone, have been implicated in pathogenesis as the frequency of Giant Juvenile Fibroadenoma Mammae increases during puberty or pregnancy and in response to oral contraceptives. Women who use oral contraceptives before the age of 20 tend to suffer from mammary fibroadenomas at a higher rate than the general population (Gaonkar et al., 2023; Kitazawa et al., 2022; Zhang et al., 2023; Zulkarnain & Harahap, 2023).

A general physical examination shows no abnormalities. The tumor on the right breast is greatly enlarged by about 7 × 7 cm with a changed contour, soft, round or oval shape, smooth, well defined, moving, and the areola complex of the nipple is enlarged. There is tension and distension of the veins on the skin that is lying too long. In the axilla, supraclavicle or subclavicle region, the enlargement of the lymph nodes is not palpable. The pathogenesis of mammal fibroadenomas as a whole is still difficult to understand, but the epithelial-stromal interaction is considered to be central to the development and growth of fibroepithelial lesions. Insulin-like growth factor (IGF) 1 stroma and IGF-2 signaling via β -catenin. Along with epidemiological and clinicopathology, the role of hormonal influence is supported by ER β stroma and repeated somatic mutations in MED12, a component of multi-protein transcription regulators. Mediator complexes that show a similar spectrum of mutations in uterine leiomyoma. Mutations in exon 2 of MED12 have been identified across the spectrum of fibroepithelial lesions, including up to 65% of FAM, most of which occur in codon 44 (Mulia et al., 2021; Varma et al., 2023; Zulkarnain & Harahap, 2023).

MED12 mutations may be more commonly associated in intracanalicular growth. Clustering mutations in the ligand-binding domain of the retinoic acid receptor α (RARA) gene have also been identified in FAM and phyllodes tumors and have been shown to have an impact on RARA transcription-mediated ones. The identification of MED12 repeating stromas and RARA mutations is an indication of monoclonality and supports the classification of at least some FAMs as neoplastic lesions rather than hyperplastic lesions. Mammal fibroadenomas can also grow from stromal connective tissue cells and functionally important epithelium in the breast. This tissue contains receptors for estrogen and progesterone. For this reason, FAM tends to grow during pregnancy due to the excessive production of female reproductive hormones. Hormonal sensitivity causes excessive proliferation of breast connective tissue (Mulia et al., 2021; Varma et al., 2023; Zulkarnain & Harahap, 2023).

Clinical symptoms in patients are in accordance with several studies that say that Giant Juvenile Fibroadenoma is a benign tumor that grows rapidly and enlarges can be accompanied by pain, round or lumpy, free to move, elastic or dense consistency. Fibroadenomas that are more than 5 cm in size, the mass can compress nearby tissues, damage the lobular architecture, and cause peau d'orange, nipple retraction, or dilatation of superficial veins, and dimples (dimpling) in the skin of the breast (Johnny A, 2023; Juarez et al., 2021; Sudula et al., 2022).

Giant Juvenile Fibroadenoma Mammae Diagnosis is established based on physical, supportive, and biopsy examinations. Supporting examinations carried out include ultrasound, mammography, and MRI (Eleftheriades et al., 2023). In the patient, data was obtained that the results of pre-operative cytology using Fine Needle Aspiration (FNA) showed the presence of Giant Juvenile Fibroadenoma (GJF) Mammae. Chest X-ray examination and abdominal ultrasound did not produce any signs of metastasis. The diagnosis of Giant Fibroadenoma is usually difficult to do, because the physical examination of the breast is not diagnostic. Physical breast examination is not specific to large masses, as it can cause similar symptoms, such as asymmetrical breasts, skin changes, or shifted complex nipples (Du et al., 2020; Islam et al., 2019; Sánchez González et al., 2022).

Supporting examinations through ultrasound and mammography are two basic routine imaging techniques in the diagnosis of breast diseases, while Magnetic Resonance Imaging (MRI)

allows for precise evaluation of size and location. However, in some cases, physical examination and standard radiographic imaging usually fail to determine a definitive diagnosis. Preoperative cytology examination is essential as it plays a role in establishing the diagnosis in most cases. However, sometimes the picture of fibroadenoma and benign or borderline phyllodes tumors overlap, making diagnosis difficult (Bardisi, Ekhlās S; Smeets, Ann; Floris et al., 2021; N. Kumar, 2021; Wang et al., 2019).

Fine Needle Aspiration (FNA) is a minimally invasive procedure used to collect a sample of cells from a mass or lesion in the breast. The procedure involves the use of a fine needle to extract the cellular material which is then examined under a microscope by a pathologist. Fine Needle Aspiration (FNA) is often used in terms of efficiency and speed, but this method may not be able to accurately distinguish between Giant Juvenile Fibroadenoma and phyllodes tumors. In fact, several large studies have concluded that FNA is not necessary for diagnosis (Cheng et al., 2023; Pepe et al., 2021). In the absence of ideal diagnostic tools and the potential for rapid tumor growth, total excision surgery is an excellent option for diagnosis and treatment at the same time. Total excision offers high safety with few reports of postoperative complications and low recurrence rates (Johnny A, 2023; Moukit et al., 2024; Sosin et al., 2015).

Core Biopsy can be an option if the patient delays complete excision. Core biopsy is a minimally invasive diagnostic procedure used to obtain tissue samples from masses or lesions in the breast for histopathological analysis. However, in pediatric patients, core biopsy can have a greater psychological and emotional impact than adult patients (Johnny A, 2023; Kitazawa et al., 2022; Sánchez González et al., 2022). Important differential diagnosis of Giant Juvenile Fibroadenoma (GJF) Mammae includes low grade phyllodes tumor, virginal hypertrophy, hamartoma, lipoma, breast abscess, macrocyst, adenocarcinoma and pseudo angiomatous stromal hyperplasia (Dayal et al., 2017).

The patient underwent a wide excision with a surgical margin of 1 cm followed by a mastopexy procedure. The management of GJF depends on several factors, such as the patient's age, tumor size, and symptoms. In pre-pubertal patients with small tumors (<5 cm) that do not cause symptoms, observation can be carried out because the tumor can shrink spontaneously after puberty. In patients with large tumors (>5 cm), tumors that cause symptoms, and patients who have already reached puberty, surgery to remove the tumor is recommended (Eleftheriades et al., 2023; Moukit et al., 2024; Zeeshan et al., 2021). A type of surgery that is often used is lumpectomy, which is a tumor removal surgery that involves only a small part of breast tissue. Another surgery is mastectomy, which is the surgery to remove the entire breast. Mastectomy is rarely performed for GJF mammae, except in cases of very large or multiple tumors. Another surgical procedure mastopexy is better known as breast lift surgery, but it can also be used in these cases to remove large tumors as well as improve the aesthetic appearance of the breast after tumor removal (Çitgez et al., 2020; H. Kumar et al., 2019).

Histopathological reports in the case of this adolescent female patient showed benign juvenile giant fibroadenoma mammae with negative margins (Sukmawati, 2018). At follow-up up to 6 months, there are no signs of recurrence on physical examination and ultrasound. Giant Juvenile Fibroadenoma generally has a good prognosis and rarely progresses to cancer. After surgery, patients can usually return to their normal activities. Histopathology is also considered the gold standard because it is not only necessary for definitive diagnosis but also aids in the differential diagnosis of giant breast masses, thus allowing timely intervention and appropriate treatment in such cases (Cáceres Fonseca et al., 2022; Eleftheriades et al., 2023; Lima et al., 2023).

CONCLUSION

One case has been reported in an 11-year-old girl with a major complaint of a lump in the left breast, rapidly enlarging over the past 6 months before being admitted to hospital. Preoperative cytology using Fine Needle Aspiration (FNA) showed the presence of Giant Juvenile

Fibroadenoma (GJF) Mammae. GJF, although a benign tumor, can compress the surrounding tissue and alter the structure of the lobules due to its increase in size and vascularization. The patient was given wide excision surgery with a surgical margin of 1 cm followed by a mastopexy procedure. A tumor measuring 7 × 7 cm has been obtained by hypervascularization. Histopathological reports show benign juvenile giant fibroadenoma mammaries with negative margins. At follow-up up to 6 months, there were no signs of recurrence on physical examination and ultrasound. The limitation of this research is that it is limited to the data obtained. Future research should be able to conduct research with a larger sample size in groups so that the results obtained can be more generalized.

References

- Arikunto. (2019). Metodologi Penelitian, Suatu Pengantar Pendidikan. In *Rineka Cipta, Jakarta*.
- Baral, S., Gyawali, M., Thapa, N., Chhetri, R. K., & Dahal, P. (2020). Giant juvenile fibroadenoma in an adolescent female: A case report. *Clinical Case Reports*, 8(12). <https://doi.org/10.1002/ccr3.3466>
- Bardisi, Ekhlash S; Smeets, Ann; Floris, G., Ongeval, Chantal Van; Keupers3, M., & Nevelsteen, I. (2021). A giant juvenile fibroadenoma in a 12-year-old girl: Case report and brief Literature review. *Journal of Clinical Images and Medical Case Reports*, 2, 1-4.
- Cáceres Fonseca, D. A., Ochoa Vásquez, J. L., Laverde Ortiz, R. J., Villavicencio Haro, K. G., & Auqui Carangui, D. A. (2022). Giant fibroadenoma of the breast, case report and literature review. *Salud, Ciencia y Tecnología*, 2. <https://doi.org/10.56294/saludcyt202287>
- Cheng, L., Tariq, H., Yan, L., Reddy, S. B., & Gattuso, P. (2023). Fine-needle aspiration of intramammary lymph nodes: a clinical, radiographic, and cytologic review. *Journal of the American Society of Cytopathology*, 12(1). <https://doi.org/10.1016/j.jasc.2022.09.004>
- ÇİTGEZ, B., BARAN, E., YİĞİT, B., BAŞ, S., TUFAN, A. E., & ÖZŞAHİN, H. (2020). Breast conservation with batwing mastopexy for the management of giant juvenile fibroadenoma: A case report of a 12-year-old girl. *Archives of Clinical and Experimental Medicine*, 5(3). <https://doi.org/10.25000/acem.799406>
- Dasgupta, R., Rajak, T. K., Kaushal, S., & Ritolia, N. (2022). Giant juvenile fibroadenoma of the breast in a 12-year-old girl. *African Journal of Paediatric Surgery*, 19(4). https://doi.org/10.4103/ajps.ajps_75_21
- Dayal, S., Shukla, K. M., & Singh, A. (2017). Giant Juvenile Fibroadenoma of the Breast in a Preadolescent Girl. *Pediatric Oncall*, 14(1). <https://doi.org/10.7199/ped.oncall.2017.1>
- Du, F., Dong, R., Zeng, A., Liu, Z., Yu, N., Wang, X., & Zhu, L. (2020). Surgical management of giant juvenile fibroadenoma with skin reducing tumor resection and immediate breast reconstruction: A single-center experience. *Journal of Surgical Oncology*, 121(3). <https://doi.org/10.1002/jso.25828>
- Dzikrullah, F.A., & Iskandar, H. (2022). A 23 Years Old Woman With Fibroadenoma Mammae: Case Report. *Continuing Medical Education Fakultas Kedokteran Universitas Muhammadiyah Surakarta*, 781-785.
- Dzikrullah, F. A., & Iskandar, H. (2022). Perempuan Usia 23 Tahun dengan Fibroadenoma Mammae : Laporan Kasus. *Proceeding Book Call for Papers Fakultas Kedokteran Universitas Muhammadiyah Surakarta*.
- Eleftheriades, A., Tsarna, E., Toutoudaki, K., Paschalidou, E., Christopoulos, N., Georgopoulos, I., Mitropoulou, G., & Christopoulos, P. (2023). Giant Juvenile Fibroadenoma: Case Report and Review of the Literature. In *Journal of Clinical Medicine* (Vol. 12, Issue 5). <https://doi.org/10.3390/jcm12051855>
- Gaonkar, V. B., Mathur, S., Hussain, S., Priyadarshini, A., Sharma, C. K., Mehrotra, R., Kataria, K., Ranjan, P., Dhar, A., Seenu, V., Hari, S., & Srivastava, A. (2023). Estrogen and Progesterone Receptors in Fibroadenoma in Response to Centchroman – a Selective Oestrogen Receptor Modulator (SERM). *Indian Journal of Surgery*, 85(3). <https://doi.org/10.1007/s12262-022-03496-z>
- Islam, S., Saroop, S., Bheem, V., & Naraynsingh, V. (2019). Largest giant juvenile fibroadenoma of the breast. *BMJ Case Reports*, 12(1). <https://doi.org/10.1136/bcr-2018-227277>
- Johnny A, P. S. (2023). Juvenile Giant Fibroadenoma Vs. Phyllodes Tumor: Know the Difference in a 14-Years-Old Woman: Case Report. *International Journal of Surgery & Surgical Techniques*, 7(1). <https://doi.org/10.23880/ijssst-16000174>
- Juarez, A. M., Juarez, C. A. S., Martinez, I. M. A., & Mondragon, E. R. (2021). Breast-conserving surgery in giant juvenile fibroadenoma: a case report. *AME Surgical Journal*, 1. <https://doi.org/10.21037/asj-21-10>
- Kar, P., & Arora, J. (2023). When Friend Becomes Foe: Complications of Fibroadenoma Imaging Spectrum. *Indographics*, 02(01). <https://doi.org/10.1055/s-0043-1771196>
- Kitazawa, M., Futamura, M., Tokumaru, Y., Kohyama, K., Nakakami, A., & Yoshida, K. (2022). Breast reconstruction using a tissue expander after enucleation of a giant fibroadenoma: A case report.

- International Journal of Surgery Case Reports*, 90. <https://doi.org/10.1016/j.ijscr.2021.106723>
- Kumar, H., Rahman, N., Ramesh, R., & Raghunandan, G. (2019). Adding bit of esthetics with science modification of batwing mastopexy for breast conservation in a young patient with giant fibroadenoma breast. *Journal of Cancer Research and Therapeutics*, 15(5). https://doi.org/10.4103/jcrt.JCRT_818_17
- Kumar, N. (2021). Breast fibroadenoma and its clinical perspectives: a prospective observational study. *International Surgery Journal*, 8(7). <https://doi.org/10.18203/2349-2902.isj20212720>
- Lima, M. R. de, Teixeira, C. M. do E., Barreto, G. P., & Leite Filho, J. G. T. de M. (2023). FIBROADENOMA AND PHYLOID TUMOR: CLINICAL DIFFERENCES AND IN IMAGING EXAMINATIONS. <https://doi.org/10.29289/259453942022v32s1034>
- Moukit, M., Rahmoune, M., Allilou, I., & Babahabib, A. (2024). Giant juvenile fibroadenoma of the breast: a case report. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 13(3). <https://doi.org/10.18203/2320-1770.ijrcog20240491>
- Mulia, I. G. B. L. P., Dewi, I. G. A. S. M., & Sumadi, I. W. J. (2021). KARAKTERISTIK KLINIKOPATOLOGI PASIEN FIBROADENOMA MAMMAE DI RSUP SANGLAH DENPASAR TAHUN 2017-2018. *E-Jurnal Medika Udayana*, 10(4). <https://doi.org/10.24843/mu.2021.v10.i4.p12>
- O.J. Uchendu, U. Umeaku, M.O. Ajagha, & E. Ejuvwevwo. (2024). Giant juvenile fibroadenoma in a 15-year-old Nigerian female: A case report with review of literature. *Ibom Medical Journal*, 17(1). <https://doi.org/10.61386/imj.v17i1.395>
- Pepe, F., Pisapia, P., Russo, G., Nacchio, M., Vigliar, E., Giuliano, M., Malapelle, U., Troncone, G., & Bellicic, C. (2021). Fine-Needle Aspiration Is Suitable for Breast Cancer BRCA Molecular Assessment: A Case Report. *Journal of Molecular Pathology*, 2(4). <https://doi.org/10.3390/jmp2040028>
- Sánchez González, M. J., Crespo Naranjo, J. A., & Vivas Flores, C. I. (2022). Giant juvenile fibroadenoma and reconstruction surgery: A case report and literature review. *Revista de Senología y Patología Mamaria*, 35(4). <https://doi.org/10.1016/j.senol.2021.06.004>
- Sirigere, N., C.D, M., & Pavitra, P. (2021). AYURVEDIC MANAGEMENT OF STANAGRANTHI W.S.R TO FIBROADENOMA OF BREAST- A SINGLE CASE STUDY. *International Ayurvedic Medical Journal*, 9(7). <https://doi.org/10.46607/iamj4309072021>
- Sosin, M., Pulcrano, M., Feldman, E. D., Patel, K. M., Nahabedian, M. Y., Weissler, J. M., & Rodriguez, E. D. (2015). Giant juvenile fibroadenoma: a systematic review with diagnostic and treatment recommendations. *Gland Surgery*, 4(4). <https://doi.org/10.3978/j.issn.2227-684X.2015.06.04>
- Sudula, M., Tejaswi, M., Tazeen, N., & Fathima, T. (2022). MED 12 gene mutation in a case of bilateral giant juvenile fibroadenoma. *Indian Journal of Pathology and Oncology*, 9(4). <https://doi.org/10.18231/j.ijpo.2022.082>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (1st ed.). Penerbit Alfabeta.
- Sukmawati, E. (2018). wahyunita yulia sari, indah sulistyoningrum. Farmakologi Kebidanan. *Trans Info Media (TIM)*.
- Sukmawati, E. (2019). PENGARUH MORINGA OLEIFERA TERHADAP PENINGKATAN ASI PADA IBU MENYUSUI. *JIKA*, 4.
- Sukmawati, E., Arief Rantauni, D., Sya, Y., Khomsah, B., Fatonah, U., Prodi DIII Kebidanan, D., & Serulingmas, S. (2023). Pelatihan Pijat Oketani Untuk Melancarkan ASI Ibu Menyusui Pada Kader Kesehatan. *Jurnal Abdimas Bina Bangsa*, 4(1), 506-514. <https://doi.org/10.46306/jabb.v4i1>
- Sukmawati, E., Imanah, N. D. N., & Suwariyah, P. (2021). Pengaruh Pendampingan Kader Kesehatan terhadap Keberhasilan Menyusui untuk Memberikan ASI Eksklusif. *Jurnal Kebidanan Indonesia*, 12(2).
- Sukmawati, E., Wijaya, M., & Hilmanto, D. (2024). Participatory Health Cadre Model to Improve Exclusive Breastfeeding Coverage with King's Conceptual System. *Journal of Multidisciplinary Healthcare*, 17, 1857-1875. <https://doi.org/10.2147/JMDH.S450634>
- Varma, K., Tripathi, S., Sharma, N., & Misra, V. (2023). Myoid hamartoma of breast clinically masquading as phyllodes tumor- A rare case report. *Indian Journal of Pathology and Oncology*, 10(1). <https://doi.org/10.18231/j.ijpo.2023.020>
- Wang, S., Xu, W., Qin, G., Wen, C., Zeng, H., He, Z., Xu, Z., & Chen, W. (2019). Differential diagnosis of phyllodes tumor and fibroadenoma of breast using mammography and ultrasonography. *Chinese Journal of Medical Imaging Technology*, 35(3). <https://doi.org/10.13929/j.1003-3289.201809005>
- Zeeshan, S., Shaikh, K., Tariq, M. U., & Vohra, L. M. (2021). Giant Juvenile Fibroadenoma of the breast in a 13-year-old Pakistani girl with excellent cosmetic outcome after subareolar enucleation - A case report. *International Journal of Surgery Case Reports*, 79. <https://doi.org/10.1016/j.ijscr.2021.01.094>
- Zhang, Y., Huang, J., Zhou, L., & Leng, Y. (2023). The largest and heaviest giant juvenile fibroadenoma of the

breast in the Chinese population: A case report. *Medicine (United States)*, 102(13).
<https://doi.org/10.1097/MD.0000000000003342>
Zulkarnain, S. P. N., & Harahap, R. S. (2023). Gambaran Klinis Pasien Fibroadenoma Mammarum Terkait Obesitas. *Jurnal Ilmiah Maksitek*, 8(1).