EPONYMS IN PATHOLOGY- A REVIEW

Running title: A review of literature on Eponyms in Pathology

Abstract

Eponyms are widely used in medicine, they arbitrarily alternate between the possessive and non-possessive forms. Eponyms are in daily use in medicine. It also indicates the name of a person after whom something such as a discovery, invention, institution etc is named usually to commemorate the importance of his/her contribution. An extensive review of literature of Eponyms in Pathology by a collection of data from Pubmed, Cambridge core, google scholar, Cochrane, and semantic scholar-based medicine articles collected from 2020 - 2021. Articles were searched with a keywords like "Eponyms in pathology and Appearance in pathology ". Those articles about pathological eponyms are included as study reference. Non indexed and poor grammatical articles were excluded. From which data was analysed to interpret the results. The main objective of this study is to understand and recognize complex pathological patterns more easily.

Keywords: Eponyms, Pathology, digestive disease, syndromes

Introduction

An eponym may be a person, place, or factor when whom or that somebody or one thing is known as. There area unit many anatomical and pathological eponyms within the organic process systems. We have reviewed elite eponyms of the gastrointestinal system pathology. (1) The remarks close the terms and eponyms within the gastrointestinal system are not different from those encountered in medication normally. Eponyms don't continually mirror the scientist's World Health Organization 1st describes the condition. Additionally, naming quiet one conditions when one person is also a supply of confusion. (2)

Eponyms in digestive system pathology

Barrett's muscular structure: It's the term given to a columnar-lined muscular structure (CLE) that is understood by thirty different terms and eponyms. This is often a condition wherever AN abnormal (metaplastic) modification within the membrane cells lining the lower portion of the muscular structure, from traditional stratified squamous epithelial tissue to easy columnar epithelial tissue with interspersed goblet cells that area unit unremarkably gift solely within the bowel (3). It's named after Australian pectoral sawbones Norman Rupert Barrett (1903–1979).

Boerhaave's syndrome: A musculature perforation that occur thanks to regurgitation. The condition is related to high morbidity and mortality and is fatal while not treated. It had been first documented by bandleader Boerhaave (1668-1738) of World Health Organization. A connected condition is Mallory-Weiss syndrome, which is barely a membrane tear (4).

Budd–Chiari syndrome - Budd–Chiari syndrome is a very rare type condition that is caused by occlusion of the hepatic veins that drain the liver. It also presents with the classical triad of abdominal pain, ascites, and liver enlargement. It is named after George Budd M.D. (1808 – 1882), who was a British physician, and Hans Chiari (1851 − 1916), who was an Austrian pathologist (5).

Caroli syndrome - A rare inherited disorder characterized by cystic dilatation (or ectasia) of the bile ducts within the liver. Named after Jacques Caroli (1902-1979), who was a French gastroenterologist.

Councilman body - The apoptotic body, also defined as the Councilman hyaline body, is an acidophilic globule of cells that represents a dying hepatocyte and is identified in the liver of people who suffer from viral hepatitis (acute), yellow fever, or other viral syndromes. Councilman bodies are named after American pathologist William Thomas Councilman (1854-1933), who had discovered them. (6)

Crohn's disease -Crohn's disease is an inflammatory bowel disease (IBD) that can affect any aspect of the digestive tract, from the mouth to the intestines. Burrill Bernard Crohn was an American gastroenterologist who lived from 1884 to 1983. (7)

Cruveilhier–Baumgarten disease - The condition in which distension of the umbilical or paraumbilical veins can be caused by liver cirrhosis and portal hypertension (Cruveilhier-Baumgarten syndrome) or congenital patency of the umbilical vein (Cruveilhier–Baumgarten disease). also known as Pégot-Cruveilhier–Baumgarten disease. It is first described by Pégot in 1833, and then by Jean Cruveilhier and Paul Clemens von Baumgarten Jean Cruveilhier (1791 –1874), was a French anatomist and pathologist. Paul Clemens von Baumgarten (1848-1928), was a German pathologist.(8)(9)

Gardner syndrome-Gardner syndrome, Turcot syndrome, or gastric adenocarcinoma and proximal polyposis of the stomach are believed to be a spectrum of familial adenomatous polyposis (FAP), depending on the specific mutation within the adenomatous polyposis coli gene (APC) (10). FAP is a rare genetic disorder with autosomal dominant inheritance, defined by numerous adenomatous polyps, which inevitably progress to colorectal carcinoma unless detected and managed early. Eldon J. Gardner (1909–1989), is an American geneticist who first described the syndrome in 1951. (11)

Ivemark's syndrome - Renal-Hepatic-Pancreatic dysplasia syndrome. Pancreatic fibrosis, renal dysplasia, and hepatic dysgenesis are all manifestations of this rare sporadic or autosomal recessive condition. In 1959, Swedish pediatrician and pathologist BiörnIvemark (1925–2005) first named it as "familial dysplasia of kidneys, liver, and pancreas." (12) Since then, this combination of abnormalities has also been named "polycystic dysplasia" and "renal-hepatic-pancreatic dysplasia". It is to avoid confusion with asplenia-cardiac anomaly syndrome, which was changed by Ivemark et al and also bears Ivemark's name (13).

Food Eponyms in Pathology

Acute cake appearance: It was described in 1794 by Richard Shannon to describe enlargement of the spleen in association with the liver which is usually connected with Malaria. (14,15). Almond-shaped organ: Gross appearance of the normal ovary. Anchovy sauce pus: The odorless brown-colored pus seen in amoebic liver abscess. Apple green

birefringence: The birefringence exhibited by amyloid stained by congo red in polarized light. Apple green sputum: The thick green-colored purulent sputum in pneumonia caused by Haemophilus influenza. Apple jelly nodules: Small sharply defined reddish-brown lesions with a gelatinous consistency seen in Lupus vulgaris(16).

Banana shaped: The crescent-shaped gametocyte of Plasmodium falciparum facilitates the sequestration of early-stage gametocytes and enabling late-stage gametocytes to circulate in the bloodstream without being removed by the mechanical filtering mechanisms in the host spleen. The elongated appearance of the cerebellum in the majority of cases of spina bifida(17,18). Berry aneurysm: The saccular aneurysm of the cerebral vessels at the junction of vessels in the circle of Willis. Blueberry muffin baby: Infants with purpura on the trunk, head, and neck because of extramedullary dermal hematopoiesis found in infants with congenital infections, TORCH syndrome (toxoplasmosis, other, rubella, Cytomegalovirus, herpes), congenital leukemia cutis and neonatal neuroblastoma, rhabdomyosarcoma and Langerhans cell histiocytosis. (19,20). Bread and Butter appearance: The shaggy appearance of the deposition of fibrinous exudate on pericardium due to an inflammatory process.

Café au lait spots: These are well-circumscribed, evenly pigmented macules and patches seen in healthy children and associated with syndromes, commonly neurofibromatosis type 1. Carrot-shaped nuclei: Shape of the nuclei with abundant chromatin and scanty cytoplasm seen in medulloblastoma, an embryonal malignant childhood tumor commonly located in the cerebellum. (21). Cauliflower-like appearance: Gross appearance of the sexually transmitted genital warts (condyloma acuminata) caused by the human papillomavirus. To describe a tumor with bulging growth with papillary excrescences commonly squamous cell carcinoma. Cheesy appearance: Gross appearance of the acellular material in caseous necrosis in granulomas produced by the release of lipid from cell walls of Mycobacterium tuberculosis and some systemic fungi(22)

FruitEponyms in Pathology

Apple jelly nodules: Granulomas of lupus vulgaris on diascopy appear as yellow-brown macules. May be appreciated in a granulomatous lesion of leishmaniasis and sarcoidosis. (23).Bean bag cells are cytophagic histiocytic panniculitis cells that are filled with white blood cells, red blood cells, nuclear fragments, and platelets, giving them a characteristic "bean-bag" appearance on histopathological inspection.(23,24). Bean’s syndrome: Also known as blue rubber-bleb nevus syndrome. Blue/purple, soft, dome-shaped, nipple-like “rubber blebs,” compressible nodules with a rubbery feel are seen. Blackberry stomatitis: Paracoccidioidomycosis, which affects, especially the mucous membranes of the mouth and is accompanied by marked adenopathy and granulomatous lesions that bleed easily giving an appearance of “blackberry.”(25). Blueberry muffin baby: Neonatal purpura of congenital rubella syndrome. Neonatal purpura of congenital rubella syndrome in a blueberry muffin baby. Congenital cytomegalovirus infection as a result of primary infection during the first and second trimesters of pregnancy induces blueberry muffin lesions. As a result of erythropoietic tissue in the dermis derived from undifferentiated dermal mesenchyme, the infant develops purple or red papules or nodules that last for 4-6 weeks.

Cayenne pepper spots: Irregular plaques of orange or brown pigmentation due to hemosiderin appearing within and at the edges of old lesions. Seen in progressive pigmented purpuric dermatosis. (26). Champagne bottle leg: Progressive subcutaneous fibrosis following chronic lipodermatosclerosis gives the leg an inverted bottle leg shape. Cherry angiomas: The most

common vascular anomalies, characterized by ruby red slightly elevated round papules. Cornflake sign: Keratotic papules (2-3 mm) with discrete irregular polygonal margins. Seen in Kyrle's and Flegel's disease. Curry-Hall syndrome: Dental abnormalities associated with short limbs, polydactyly, and nail dysplasia. Curry Jones syndrome: Asymmetrical facial appearance, craniosynostosis, preaxial polysyndactyly, agenesis of the corpus callosum, and unusual skin with streaky areas of atrophy. (27).

Doughnut sign: Central depression surrounded by an elevated rim of skin is noted on the extended proximal interphalangeal joint. Seen in scleromyxedema. Fried egg: Central elevation in atypical nevi may have an appearance of sunny side up fried egg. Garlic clove fibroma: Acquired periungual fibrokeratoma or acquired digital fibrokeratoma. Benign asymptomatic fibromas with a hyperkeratotic tip and narrow base arising in the eperiunguium, especially at the proximal matrix(28) Our team has extensive knowledge and research experience that has translate into high quality publications (29).(30–43) ,(44–48)

Conclusion

Usage of eponyms often makes a pathologist's laborious tasks more convenient. The analogical way of thinking helps us to learn and retain things in a better way. This makes the tedious task more acceptable and more convenient.

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Aleena alex, carried out the literature search, data collection, data analysis and manuscript writing. Dr. Priyadharshini and Dr. Palati sinduja conceived the study, participated in its design, coordinated and provided guidance to draft the manuscript. All the authors have equally contributed in developing the manuscript.

Reference

1. Ignatavicius DD, Linda Workman M. Medical-surgical Nursing: Patient-centered Collaborative Care. W B Saunders Company; 2010. 1913 p.

2. Ignatavicius DD, Hausman KA. Clinical Pathways for Collaborative Practice. Dimensions of Critical Care Nursing. 1996;15(4):205.

3. Rees PH. "Ague cake" or hyper-reactive malarial splenomegaly. East Afr Med J. 1994 Dec;71(12):761.

4. Jaroensuk J, Stoesser N, Leimanis ML, Jittamala P, White NJ, Nosten FH, et al. Treatment of Suspected Hyper-Reactive Malarial Splenomegaly (HMS) in Pregnancy with Mefloquine. The American Journal of Tropical Medicine and Hygiene. 2014;90(4):609–11.

5. Mothe B, Lopez-Contreras J, Torres OH, Muñoz C, Domingo P, Gurgui M. A Case of Hyper-reactive Malarial Splenomegaly. The Role of Rapid Antigen-detecting and PCR-based Tests. Infection. 2008;36(2):167–9.

6. Hughes JR, Pembrokk AC. Cutaneous sarcoid treated with mepacrine. Clinical and Experimental Dermatology. 1994;19(5):448–448.

7. Davies PJB, Eyre S. Treatment with Doxycycline is Associated with Reduced Spleen Size in Hyper-Reactive Malarial Splenomegaly: A Cohort Study. 2019;3(1):141–5.

8. Manenti F, Porta E, Esposito R, Antinori S. Treatment of hyperreactive malarial splenomegaly syndrome. The Lancet. 1994;343(8910):1441–2.

9. Ahmad I, Ahmad F, Pichtel J. Microbes and Microbial Technology: Agricultural and Environmental Applications. Springer Science & Business Media; 2011. 516 p.

10. Ramawat KG. Herbal Drugs: Ethnomedicine to Modern Medicine. Springer Science & Business Media; 2008. 402 p.

11. Bisoffi Z, Leoni S, Angheben A, Beltrame A, Eseme FE, Gobbi F, et al. Chronic malaria and hyper-reactive malarial splenomegaly: a retrospective study on the largest series observed in a non-endemic country. Malaria Journal. 2016;15(1):182–6.

12. Cameron AC, Widmer RP. Handbook of Pediatric Dentistry E-Book. Elsevier Health Sciences; 2013. 512 p.

13. Wagner R, Bellettini CV. Mevalonic Aciduria as a Differential Diagnosis of Blueberry Muffin Baby. Journal of Neonatal Biology. 2016;5(3):13–6.

14. Elmakki EE. Hyper-reactive Malarial Splenomegaly Syndrome (HMSS): Review article. Cureus. 2012;3(1):24–6.

15. Brundha MP. A Comparative Study-The Role of Skin and Nerve Biopsy in Hansen's Disease. Res J Pharm Biol Chem Sci. 2015;7(10):837.

16. Harsha L, Brundha MP. Prevalence of Dental Developmental Anomalies among Men and Women and its Psychological Effect in a Given Population. Journal of Pharmaceutical Sciences and Research; Cuddalore. 2017 Jun 20;9(6):869–73.

17. Bates I, Bedu-Addo G. Review of diagnostic criteria of hyper-reactive malarial splenomegaly. The Lancet. 1997;349(9059):1178.

18. Timothy CN, Samyuktha PS, Brundha MP. Dental pulp Stem Cells in Regenerative Medicine--A Literature Review. Research Journal of Pharmacy and Technology. 2019;12(8):4052–6.

19. Allam MM, Tayseer A M, Ahmed BG, Elkhair IS, Alansary EH, Ibrahim ME, et al. Hyper-reactive Malarial Splenomegaly (HMS) in malaria endemic area in Eastern Sudan. Acta Tropica. 2008;105(2):196–9.

20. Hannah R, Ramani P, Brundha MP, Sherlin HJ, Ranjith G, Ramasubramanian A, et al. Liquid Paraffin as a Rehydrant for Air Dried Buccal Smear. Research Journal of Pharmacy and Technology. 2019;12(3):1197–200.

21. Rambhia K, Shah V, Mukhi J, Singh R. Blueberry muffin baby with cytomegalovirus hepatitis. Indian Dermatology Online Journal. 2019;10(3):327.

22. Mehta V, Balachandran C. Idiopathic vulvar calcinosis: The counterpart of idiopathic scrotal calcinosis. Indian Journal of Dermatology. 2008;53(3):159.

23. Taj F, Sarin V. Blueberry muffin baby (dermal erythropoiesis) with non-ketotichyperglycinemia. Indian Journal of Paediatric Dermatology. 2013;14(1):30.

24. Larson KN, Gaitan SR, Stahr BJ, Morrell DS. Hemophagocytic Lymphohistiocytosis in a Newborn Presenting as "Blueberry Muffin Baby." Pediatric Dermatology. 2017;34(3):e150–1.

25. Shaffer MP, Walling HW, Stone MS. Langerhans cell histiocytosis presenting as blueberry muffin baby. Journal of the American Academy of Dermatology. 2005;53(2):S143–6.

26. Gleason CA, Juul SE. Avery's Diseases of the Newborn E-Book. Elsevier Health Sciences; 2017. 1520 p.

27. El-Darouti MA. Blueberry-Muffin Lesions in a Baby. Challenging Cases in Dermatology. 2013;671–6.

28. Gilbert-Barness E. Potter's Pathology of the Fetus, Infant, and Child. 2007. 2245 p.

29. Anita R, Paramasivam A, Priyadharsini JV, Chitra S. The m6A readers YTHDF1 and YTHDF3 aberrations associated with metastasis and predict poor prognosis in breast cancer patients. Am J Cancer Res. 2020 Aug 1;10(8):2546–54.

30. Jayaseelan VP, Paramasivam A. Emerging role of NET inhibitors in cardiovascular diseases. Hypertens Res. 2020 Dec;43(12):1459–61.

31. Sivakumar S, SmilineGirija AS, VijayashreePriyadharsini J. Evaluation of the inhibitory effect of caffeic acid and gallic acid on tetR and tetM efflux pumps mediating tetracycline resistance in Streptococcus sp., using computational approach. Journal of King Saud University - Science. 2020 Jan 1;32(1):904–9.

32. SmilineGirija AS. Delineating the Immuno-Dominant Antigenic Vaccine Peptides Against gacS-Sensor Kinase in Acinetobacter baumannii: An in silico Investigational Approach. Front Microbiol. 2020 Sep 8;11:2078.

33. IswaryaJaisankar A, SmilineGirija AS, Gunasekaran S, VijayashreePriyadharsini J. Molecular characterisation of csgA gene among ESBL strains of A. baumannii and targeting with essential oil compounds from Azadirachta indica. Journal of King Saud University - Science. 2020 Dec 1;32(8):3380–7.

34. Girija ASS. Fox3+ CD25+ CD4+ T-regulatory cells may transform the nCoV's final destiny to CNS! J Med Virol [Internet]. 2020 Sep 3; Available from: http://dx.doi.org/10.1002/jmv.26482

35. Jayaseelan VP, Ramesh A, Arumugam P. Breast cancer and DDT: putative interactions, associated gene alterations, and molecular pathways. Environ Sci Pollut Res Int. 2021 Jun;28(21):27162–73.

36. Arumugam P, George R, Jayaseelan VP. Aberrations of m6A regulators are associated with tumorigenesis and metastasis in head and neck squamous cell carcinoma. Arch Oral Biol. 2021 Feb;122:105030.

37. Kumar SP, Girija ASS, Priyadharsini JV. Targeting NM23-H1-mediated inhibition of tumour metastasis in viral hepatitis with bioactive compounds from Ganoderma lucidum: A computational study. pharmaceutical-sciences [Internet]. 2020;82(2). Available from: https://www.ijpsonline.com/articles/targeting-nm23h1mediated-inhibition-of-tumour-metastasis-in-viral-hepatitis-with-bioactive-compounds-from-ganoderma-lucidum-a-comp-3883.html

38. Girija SA, Priyadharsini JV, Paramasivam A. Prevalence of carbapenem-hydrolyzing OXA-type β-lactamases among Acinetobacter baumannii in patients with severe urinary tract infection. Acta Microbiol Immunol Hung. 2019 Dec 9;67(1):49–55.

39. Priyadharsini JV, Paramasivam A. RNA editors: key regulators of viral response in cancer patients. Epigenomics. 2021 Feb;13(3):165–7.

40. Mathivadani V, Smiline AS, Priyadharsini JV. Targeting Epstein-Barr virus nuclear antigen 1 (EBNA-1) with Murrayakoengii bio-compounds: An in-silico approach. Acta Virol. 2020;64(1):93–9.

41. Girija As S, Priyadharsini J V, A P. Prevalence of Acb and non-Acb complex in elderly population with urinary tract infection (UTI). Acta Clin Belg. 2021 Apr;76(2):106–12.

42. Anchana SR, Girija SAS, Gunasekaran S, Priyadharsini VJ. Detection of csgA gene in carbapenem-resistant Acinetobacter baumannii strains and targeting with Ocimum sanctum biocompounds. Iran J Basic Med Sci. 2021 May;24(5):690–8.

43. Girija ASS, Shoba G, Priyadharsini JV. Accessing the T-Cell and B-Cell Immuno-Dominant Peptides from A.baumannii Biofilm Associated Protein (bap) as Vaccine Candidates: A Computational Approach. Int J Pept Res Ther. 2021 Mar 1;27(1):37–45.

44. Arvind P TR, Jain RK. Skeletally anchored forsus fatigue resistant device for correction of Class II malocclusions-A systematic review and meta-analysis. OrthodCraniofac Res. 2021 Feb;24(1):52–61.

45. Venugopal A, Vaid N, Bowman SJ. Outstanding, yet redundant? After all, you may be another Choluteca Bridge! Semin Orthod. 2021 Mar 1;27(1):53–6.

46. Ramadurai N, Gurunathan D, Samuel AV, Subramanian E, Rodrigues SJL. Effectiveness of 2% Articaine as an anesthetic agent in children: randomized controlled trial. Clin Oral Investig. 2019 Sep;23(9):3543–50.

47. Varghese SS, Ramesh A, Veeraiyan DN. Blended Module-Based Teaching in Biostatistics and Research Methodology: A Retrospective Study with Postgraduate Dental Students. J Dent Educ. 2019 Apr;83(4):445–50.

48. Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial [Internet]. Vol. 24, Clinical Oral Investigations. 2020. p. 3275–80. Available from: http://dx.doi.org/10.1007/s00784-020-03204-9