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Sputum Cytology in Conventional Ayurveda as a Supportive Diagnostic Method Kāsa Categorization: A Comprehensive Conceptual Analysis

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Abstract

A thorough diagnostic method based on the functional and structural evaluation of *Doca*, *Dhātu*, *Srotas*, and *Agni* state is emphasized in *Ayurveda*. Coughing and fluctuating sputum production are two of the clinically prominent illness entities associated with *Kāsa*, one of the respiratory ailments mentioned in *Ayurvedic* literature. Based on *Docic* predominance, classical *Ayurvedic* books offer comprehensive qualitative descriptions of sputum that are crucial for prediction and illness differentiation. However, there may be inter-observer heterogeneity because modern *Ayurvedic* clinical treatment mostly relies on physician interpretation and experience.

Objective laboratory techniques like sputum cytology, made possible by modern biomedical science, allow for the cellular-level evaluation of inflammatory and pathogenic processes in the respiratory tract. The goal of this review is to conceptually tie the features of classical *Ayurvedic sputum* to contemporary cytological findings. The scientific confirmation of conventional clinical findings may be strengthened by this integrative understanding, which may also help standardize *Ayurvedic* diagnostic measures.

Key words : *Dosa*, *Prānavaha Srotas*, Integrative Diagnostics, *Kāsa*, Sputum Cytology, and Ayurveda

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According to *Ayurveda*, diagnosis involves more than just identifying a disease; it also entails comprehending the functional imbalance that exists at several physiological levels. Preserving health and managing illness through personalized evaluation are among *Ayurveda's* main goals[1]. A thorough assessment of *Dosa* state, *Dhātu* integrity, *Srotas* patency, and metabolic strength is necessary for this.

- Physician observation, logical reasoning, and experiential interpretation are all crucial components of *Ayurvedic* diagnosis in clinical practice. Although this allows for personalized patient evaluation, it also creates variation within practitioners. Modern medicine, on the other hand, makes use of laboratory tests and defined diagnostic standards, which allow for diagnosis to be consistent and repeatable.

Respiratory problems continue to be a significant global health concern.[6] Imaging, microbiology, and cytological analysis of respiratory secretions are all part of the current diagnostic evaluation of these diseases[3]. Among these, sputum cytology provides a non-invasive way to evaluate respiratory tract infection, inflammation, and cancer.

Sputum examination is a component of clinical evaluation under *Steevana Parīksā* in *Ayurvedic* diagnostics. *Kāsa* is defined as a disease of *Prānavaha Srotas* that is mostly caused by *Vāta Dosa* vitiation and is frequently linked to *Kapha* or *Pitta* involvement[9]. The sputum characteristics in different varieties of *Kāsa* are described in amazing detail in classical writings, indicating that ancient physicians had highly developed clinical observational skills.

The goal of the current study is to conceptually connect contemporary cytological findings with traditional *Ayurvedic* qualitative sputum assessment.

Historical perspective of Sputum examination:

In conventional medical systems, the observation of bodily secretions has long been a crucial diagnostic method. Sweat, urine, stool, and sputum were all seen by *Ayurveda* as outward signs of internal physiological and pathological conditions. To comprehend illness processes, ancient doctors used sensory-based examination methods such as ocular inspection, tactile assessment, and olfactory evaluation.

Variations in the color, consistency, quantity, and odor of sputum are well documented in classical *Ayurvedic* literature, particularly in respiratory conditions like *Kāsa* and *Śvāsa*. Long before microscopic diagnostic methods were developed, these descriptions show a heavy emphasis on clinical observation and pattern recognition.

Microbiological findings in the 19th century marked the beginning of the development of sputum examination in modern medicine. The diagnosis of respiratory diseases was greatly enhanced by the discovery of infectious organisms in sputum. Later develop-ments in cytopathology made it possible to analyze sputum samples in great detail, which helped diagnose cancer and inflammatory diseases[3,5].

Therefore, contemporary cytology provides microscopic structural evidence, whereas *Ayurveda* offered macroscopic and functional explanation. By combining these two viewpoints, diagnostic comprehension can be

improved.

Ayurvedic concept of Kāsa :

It is said that exacerbated *Vāta Dosa*[1] is the primary cause of *Kāsa*, a sickness that largely affects the *Prānavaha Srotas*. Abnormal airflow and a strong cough response occur when *Kapha* or *Pitta* block *Vāta* movement in respiratory pathways.

Nidāna (Etiological Factors) :

Exposure to dust and smoke in the environment, excessive physical effort, repression of natural desires, poor eating habits, persistent respiratory infections, and widespread tissue depletion are important etiological causes.[1,9].

Samprāpti (Pathogenesis) :

The pathogenesis involves *Vāta* aggravation followed by obstruction due to *Kapha* or *Pitta* accumulation in respiratory channels. This results in irritation of airway mucosa, cough reflex stimulation, and altered sputum production[2].

Classification of Kāsa :

Vātaja Kāsa

Characterized by dry cough, minimal sputum, throat dryness, chest discomfort, and hoarseness[1].

Pittaja Kāsa :

Characterized by yellow or green sputum, burning sensation, fever, foul smell, and occasional hemoptysis[9].

Kaphaja Kāsa :

Characterized by thick, white, sticky sputum, chest heaviness, lethargy, and excessive secretion[9].

Ksataja Kāsa :

Associated with trauma or structural injury, presenting with blood mixed sputum and severe chest pain[8].

Ksayaja Kāsa :

Represents chronic disease state with tissue depletion, characterised by purulent and blood mixed sputumt[4].

Sputum characteristics serve as an important differentiating diagnostic parameter in Ayurvedic clinical assessment[1,8].

Modern concept of sputum cytology :

Sputum cytology involves microscopic examination of exfoliated respiratory epithelial cells, inflammatory cells, microorganisms, and abnormal cells[5].

Common Component	Cytological Findings Clinical Interpretation
Neutrophils	Acute bacterial infection[3]
Eosinophils	Allergic airway disorders[3]
Lymphocytes	Viral infections[3]
Macrophages	Chronic inflammatory conditions[5]
RBCs	Pulmonary hemorrhage[5]

Integrative Conceptual Correlation :

There are significant conceptual

parallels between contemporary inflammatory cytology findings and the qualitative sputum descriptions found in *Ayurveda*. Airway irritation and low levels of inflammatory exudate may be associated with *Vātaja* Kāsa. *Pittaja Kāsa* is associated with inflammatory pathology that is dominated by neutrophils. Chronic inflammatory cell presence and mucus hyper-secretion are correlated with *Kaphaja Kāsa*. Haemorrhagic and chronic inflammatory cytological characteristics are correlated with *Ksataja* and *Ksayaja Kāsa*, respectively.

The idea of creating objective supportive metrics for *Ayurvedic* diagnosis is supported by the integrative model's notable conceptual convergence between contemporary cytological inflammatory patterns and traditional *Ayurvedic* sputum descriptions.

Ayurveda's strength is its capacity to identify functional imbalances before structural pathology progresses. Sputum reports from the past show advanced clinical observation abilities. Cellular evidence of inflammatory and pathogenic processes is provided by modern cytology[3,5].

The association between *Dosic* traits and cytological results implies that traditional *Ayurvedic* practitioners used sophisticated observational techniques to identify illness patterns. However, although cytology offers localized cellular information, *Ayurveda* views disease as a systemic functional imbalance.

Therefore, rather than serving as a substitute for *Ayurvedic* clinical evaluation, sputum cytology should be considered a supportive diagnostic supplement. Clinical correlation investigations, molecular biomarker mapping, and pattern identification using digital cytology should be the main areas of future research.

Ayurvedic diagnostic techniques must be standardized in order to increase clinical repeatability and get international scientific recognition. In *Kāsa* classification, sputum cytology could be a useful objective diagnostic aid. Evidence-based *Ayurvedic* practice may be strengthened by combining contemporary laboratory research with traditional *Ayurvedic* diagnostic knowledge.

In order to validate these integrated notions, more multidisciplinary clinical research is needed.

References :

1. Agnivesha. (2014). Charaka Samhita. In: Sharma PV, editor. Charaka Samhita (English translation). Varanasi: Chaukhambha Orientalia.
2. Bancroft JD, and M Gamble. (2013). Theory and practice of histological techniques. 7th ed. Philadelphia: Elsevier.
3. Davidson S, (2012). editor. Davidson's principles and practice of medicine. 24th ed. Edinburgh: Elsevier.
4. Fishman AP. (2015). Fishman's pulmonary diseases and disorders. 5th ed. New York: McGraw Hill.
5. Koss LG, and MR Melamed. (2006). Koss' diagnostic cytology and its histopathologic bases. 5th ed. Philadelphia: Lippincott Williams & Wilkins.

6. Kumar V, AK Abbas, and JC. Aster (2021). Robbins and Cotran pathologic basis of disease. 10th ed. Philadelphia: Elsevier;
7. Murray PR, KS Rosenthal, and MA. Pfaller (2020). Medical microbiology. 9th ed. Philadelphia: Elsevier.
8. Sushruta. (2010). Sushruta Samhita. In: Sharma PV, editor. Varanasi: Chaukhambha Visvabharati.
9. Vagbhata. (2012). Ashtanga Hridaya. In: Srikantha Murthy KR, translator. Varanasi: Chaukhambha Krishnadas Academy.
10. World Health Organization (2018). Laboratory diagnosis of respiratory infections. Geneva: WHO Press.