MedCrave
Step into the World of Research

International Journal of Pregnancy & Child Birth

Review Article

Open Access

The ethics of overdiagnosis in fetal medicine: A case for more prudent communication?

Abstract

The widespread adoption of prenatal ultrasound has revolutionized fetal medicine, enabling earlier detection of anatomical abnormalities. However, this technological progress has given rise to a concerning phenomenon of overdiagnosis, particularly evident in conditions like antenatal hydronephrosis. This review explores the ethical implications of diagnosing and communicating fetal conditions with high rates of spontaneous resolution, using ANH as a paradigmatic example. Through the lenses of medical epistemology, principlist bioethics, and postmodern critiques of medical authority, we critically examine current communication practices and their impact on expectant parents. We argue that the threshold for disclosing certain prenatal findings should be reevaluated to balance the principles of parental autonomy and beneficence with the potential psychological harms of unnecessary medicalization.

A threshold-based disclosure approach is herewith proposed wherein the communication strategies are calibrated to the severity and clinical significance of antenatal findings. This includes pre-testing counseling about the possibility of detecting variations with uncertain significance, using non-pathologizing language when discussing findings, and developing proportional follow-up protocols that minimize unnecessary medicalization while ensuring appropriate monitoring for clinically significant anomalies.

Keywords: parental autonomy, fetal medicine, pathology, prenatal diagnosis

Volume 11 Issue 1 - 2025

Shivani Phugat, Prabudh Goel
Department of Paediatric Surgery, All India Institute of Medical Sciences, India

Correspondence: Prabudh Goel, Additional Professor of Paediatric Surgery, Department of Paediatric Surgery, All India Institute of Medical Sciences, New Delhi, India, Tel +91-9999944511

Received: March 15, 2025 | **Published:** March 24, 2025

Introduction

Advances in prenatal imaging have dramatically expanded our capacity to detect anatomical variations in the fetus. What was once invisible until birth now unfolds on the ultrasound screen in meticulous detail. While this technological progress has undoubtedly improved outcomes for many conditions requiring early intervention, it has simultaneously created a new diagnostic dilemma: the detection of findings that may never progress to clinically significant pathology.

Antenatal hydronephrosis (ANH) represents perhaps the quintessential example of this phenomenon. Defined as dilation of the renal collecting system, ANH is detected in approximately 1-5.4% of all pregnancies, making it one of the most common prenatally diagnosed conditions.[1–3] Yet, follow-up studies consistently demonstrate that 64-94% of these cases resolve spontaneously without intervention.[2] Of those that persist postnatally, only a small fraction ultimately requires surgical intervention, while the majority represent non-obstructive dilation or physiological variants.[4]

This quantifiable discrepancy between detection rates and clinical significance raises substantive ethical questions regarding disclosure practices. Current clinical practice generally favors full disclosure of all detected anomalies, operating under the bioethical principle of respect for autonomy.[5] However, this approach may insufficiently account for the psychological burden placed on parents who have to go through the uncertainty of a diagnosis that is unlikely to impact their child's health.

While extensive literature exists on the technical aspects of prenatal diagnosis and the ethical principles governing disclosure in general, there remains a significant gap in translating these principles into practical communication frameworks specifically for conditions with high spontaneous resolution rates. This review addresses this gap by integrating empirical evidence on ANH outcomes with ethical frameworks to develop concrete guidance for clinicians navigating the tension between comprehensive disclosure and avoiding unnecessary medicalization.

The analysis examines the ethics of overdiagnosis in fetal medicine through three complementary philosophical lenses: the epistemology of medicine, principlist bioethics, and postmodern critiques of medical authority. Furthermore, it confronts how anxiety induced by ambiguous information may paradoxically undermine the autonomous decision-making that disclosure policies aim to support. By interrogating whether current communication practices surrounding findings like ANH are ethically justified, this review explores potential alternatives that might better serve the interests of patients and their families.

The problem of overdiagnosis in fetal medicine

Defining overdiagnosis

Overdiagnosis occurs when a condition is diagnosed that would never have caused symptoms or harm during a patient's lifetime.[6] It is primarily driven by two mechanisms: overdetection, which involves identifying abnormalities that would not progress, and overdefinition of disease, which expands diagnostic criteria to include conditions unlikely to cause harm. Although the pathways to overdiagnosis vary, the outcomes are consistent: diagnoses that result in net harm rather than benefit to the patient.[7]

This phenomenon is particularly challenging in fetal medicine due to several factors:

1. The natural history of many prenatally identified conditions is not fully elucidated, leading to uncertainty about their long-term implications.

2. The temporal gap between prenatal diagnosis and the potential postnatal manifestation of clinical significance creates prolonged periods of ambiguity for both clinicians and patients.
3. The emotionally charged context of pregnancy exacerbates the psychological burden associated with receiving potentially concerning diagnostic information.

Antenatal hydronephrosis as a paradigm case

ANH exemplifies the overdiagnosis phenomenon in fetal medicine as studies consistently show that the majority of prenatally detected cases resolve spontaneously without intervention. Sidhu et al.,[8] found that 70% of mild to moderate ANH cases improved or resolved completely without treatment, while Lee et al.,[9] demonstrated in their meta-analysis that 88.1% of mild ANH resolved before birth. However, the discrepancy between detection and clinical significance is further complicated by inconsistent classification systems and varying definitions of ANH, which create additional uncertainty in prognostication.[10] This ambiguity, coupled with the emotionally charged context of pregnancy, makes communicating the significance of findings to expectant parents particularly challenging, often leading to prolonged uncertainty and psychological burden.

Psychological impact of prenatal diagnosis

The psychological consequences of communicating uncertain prenatal findings can be profound, often leading to elevated maternal anxiety that persists throughout pregnancy and into the postnatal period. This anxiety can disrupt maternal-fetal bonding, increase stress during an already vulnerable time, and contribute to antenatal attachment uncertainty, where parents struggle to form an emotional connection with the unborn baby due to fears of loss or complications. These quantitative measures persist despite counseling about high resolution rates, demonstrating what is known as "anticipatory anxiety resilience," wherein initial negative emotional responses remain resistant to subsequent reassurance.[11–13]

Additionally, the psychological burden is compounded by the lack of clear prognostic information and the variability in clinical outcomes, which can leave parents in a state of prolonged uncertainty. This uncertainty may lead to heightened vigilance, overmedicalization, or unnecessary interventions, further exacerbating stress and anxiety.

Philosophical perspectives on overdiagnosis

Epistemological considerations

The epistemology of medicine—how diagnostic knowledge is constructed and validated—provides critical insights into the overdiagnosis phenomenon. Several epistemological tensions are evident in the ANH scenario:

Normal variation versus pathology

Advances in imaging technology have significantly outpaced our understanding of the spectrum of normal fetal development. As the resolution and sensitivity of imaging techniques improve, the distinction between pathology and normal variation becomes increasingly ambiguous.[14] This is particularly evident in the case of ANH, where there is ongoing debate about the degree of renal pelvic dilation that constitutes a clinically significant finding.[10] The Society for Fetal Urology classification system seeks to standardize this continuum; however, the thresholds used to define severity remain somewhat arbitrary and lack robust evidence-based validation.[10] This diagnostic uncertainty underscores the challenges in distinguishing between benign variations and true pathology, often leading to overdiagnosis and unnecessary parental anxiety.

Predictive limitations and uncertainty

Medical epistemology acknowledges that knowledge is inherently probabilistic rather than absolute. In the context of ANH, the ability to predict which cases will resolve spontaneously and which will require postnatal intervention remains limited, despite decades of research. While certain factors—such as the degree of renal pelvic dilation, unilateral versus bilateral involvement, and the sex of the fetus—have been shown to influence prognosis, individual prediction remains imprecise.[9,15] This uncertainty highlights the challenges in translating population-based data into precise prognostic tools for individual cases, underscoring the need for continued research to refine risk stratification and improve clinical decision-making.

Bioethical principles in tension

Principlism, the dominant framework in contemporary bioethics, identifies four core principles: respect for autonomy, beneficence, non-maleficence, and justice.[5] In the context of communicating findings like ANH, these principles often come into tension, creating complex ethical dilemmas for healthcare providers and parents alike.

Autonomy versus non-maleficence

The principle of respect for autonomy emphasizes that parents have the right to all information about their fetus, even in the face of prognostic uncertainty. However, the principle of non-maleficence ("do no harm") raises concerns about the potential psychological harm of disclosing information with limited clinical utility. This tension creates what has been termed an "autonomy trap"—where the provision of information intended to empower autonomy may instead undermine parents' capacity for autonomous decision-making by inducing anxiety and confusion.[16]

Truth-telling and proportionality

While truth-telling is a fundamental ethical obligation, the principle of proportionality suggests that the manner and extent of disclosure should be calibrated to the significance of the finding and its potential impact [5]. For conditions like ANH with high resolution rates, proportionality might justify a more measured approach to disclosure. This would involve contextualizing the finding within its likely benign course, thereby reducing unnecessary alarm while still respecting parents' right to information. For example, instead of framing ANH as a "problem," providers might describe it as a "common variation" that is likely to resolve on its own, while still providing clear guidance on monitoring and follow-up.

The precautionary principle in fetal medicine

Healthcare providers often invoke the precautionary principle—erring on the side of caution when uncertainty exists—to justify comprehensive disclosure and follow-up of all detected anomalies. However, this approach may inadequately account for the iatrogenic harms of anxiety and medicalization. A more balanced application of the precautionary principle would consider both the potential harms of missing significant pathology and the harms of overdiagnosis ensuring that decisions are guided by evidence-based risk assessment rather than fear of litigation or diagnostic omission.

Postmodern critique of medical authority

Postmodern perspectives on medicine provide a critical lens for examining how medical authority shapes the experience of pregnancy and the communication of prenatal findings:

Citation: Phugat S, Goel P. The ethics of overdiagnosis in fetal medicine: A case for more prudent communication? Pregnancy & Child Birth. 2025;11(1):1–5. DOI: 10.15406/ipcb.2025.11.00312

Medicalization of pregnancy

The concept of medicalization—the process by which non-medical issues come to be defined and treated as medical problems—is particularly relevant to prenatal care.[17] Routine prenatal ultrasound has transformed pregnancy from a natural process to a medically monitored state, with the fetus increasingly conceptualized as a patient separate from the pregnant woman.[18] The disclosure of findings like ANH further intensifies this medicalization.

Power dynamics in prenatal communication

Following Foucault's analysis of medical discourse as a form of power, we can recognize how the communication of prenatal findings reflects and reinforces power dynamics between healthcare providers and patients. The language used to describe ANH—"abnormality," "defect," "problem"—carries implicit value judgments and authority that shape parents' perceptions, often in ways that amplify anxiety.[18]

The technological imperative

The "technological imperative"—the tendency to use technology simply because it is available—drives much of prenatal diagnosis.[19,20] This imperative often operates without sufficient critical reflection on whether the information gained improves outcomes or serves patients' interests. The routine disclosure of ANH exemplifies this phenomenon, with technology-generated information flowing to patients without adequate consideration of its value or impact.

Ethical frameworks for communication

Current models of disclosure

Three dominant models currently guide the disclosure of prenatal findings:

Full disclosure model: All detected variations, regardless of clinical significance, are communicated to patients in detail. This model prioritizes patient autonomy and transparency but risks inducing unnecessary anxiety, particularly for findings like mild antenatal hydronephrosis (ANH) that are likely to resolve spontaneously.

Graduated disclosure model: Information is provided in stages, with initial disclosure limited to findings of clear clinical significance. This approach aims to balance autonomy with psychological well-being but may be perceived as paternalistic if patients feel they are being denied potentially relevant information.

Patient-directed disclosure model: Patients determine in advance what types of findings they wish to be informed about. While this model respects individual preferences, it places a significant burden on patients to make complex decisions with limited medical knowledge, potentially leading to confusion or regret.

Each model has strengths and limitations when applied to findings like ANH. The full disclosure model maximizes autonomy but may induce unnecessary anxiety. The graduated disclosure model attempts to balance information provision with psychological well-being but risks paternalism. The patient-directed model respects individual preferences but requires patients to make complex decisions with limited medical knowledge.

Threshold approaches to disclosure

An alternative approach would establish thresholds for disclosure based on the likelihood of clinical significance. Benn and Chapman[21] proposed information should be disclosed only when the potential benefits of disclosure outweigh the potential harms. Applied to ANH, this might mean:

Disclosure of severe hydronephrosis (Society for fetal urology grade 3-4): Given the higher likelihood of postnatal intervention, the benefits of disclosure (e.g., enabling informed decision-making and preparation) likely outweigh the potential harms.

Limited disclosure or strategic disclosure of mild hydronephrosis (Grade 1-2): Given the high spontaneous resolution rate and minimal clinical significance, the risks of inducing unnecessary anxiety and overmedicalization may outweigh the benefits of disclosure.[15] This approach acknowledges that information is not inherently beneficial and that the ethical obligation to disclose should be proportional to clinical utility.

Shared decision-making and communicative ethics

Habermas's communicative ethics offers a framework for navigating disclosure decisions through dialogue rather than rigid principles.[22,23] This approach emphasizes:

1. Creating conditions for genuine dialogue between providers and patients
2. Acknowledging the values and preferences that shape both medical and patient perspectives
3. Reaching consensus through reasoned deliberation rather than authority

Applied to ANH, this might involve pre-ultrasound counseling about the possibility of detecting findings of uncertain significance, and collaborative decision-making about disclosure preferences before findings are identified.

Practical considerations and recommendations

Reforming communication practices

Based on the ethical frameworks discussed, we propose the following reforms to communication practices surrounding findings like ANH:

Pre-testing counseling

Prior to prenatal imaging, patients should receive counseling about:

a. The possibility of detecting findings of uncertain clinical significance

b. The high spontaneous resolution rate of conditions like ANH

c. The option to establish disclosure preferences in advance

Contextualizing language

When disclosure is warranted, providers should:

I. Avoid terminology that pathologizes normal variations ("abnormality," "defect")

II. Present statistical information about resolution rates clearly

III. Frame findings as "observations" rather than "diagnoses" when appropriate

Citation: Phugat S, Goel P. The ethics of overdiagnosis in fetal medicine: A case for more prudent communication? Pregnancy & Child Birth. 2025;11(1):1–5. DOI: 10.15406/ipcb.2025.11.00312

Proportional follow-up recommendations

Follow-up recommendations should be calibrated to the likelihood of clinical significance:

a. For mild ANH with high resolution probability, consider less frequent monitoring

b. Discuss the option of minimal follow-up for findings unlikely to require intervention

c. Present monitoring as a precaution rather than a necessity

Research needs

Addressing overdiagnosis in fetal medicine requires further research in several areas:

1. Long-term psychological impact of different disclosure approaches
2. Patient preferences regarding disclosure of findings with uncertain significance
3. Development of more precise predictive models for the natural history of conditions like ANH
4. Economic analysis of the costs associated with monitoring versus the benefits of early detection

Policy implications

Practice patterns around disclosure are significantly influenced by professional considerations beyond purely clinical factors. Providers may feel an obligation to communicate all findings regardless of clinical significance to maintain complete transparency, potentially leading to overdiagnosis and over-communication. This approach, while well-intentioned, may not always serve patients optimally. Conversely, a threshold-based approach to disclosure requires careful balancing of information provision with potential psychological impact. This tension calls for thoughtful frameworks that acknowledge both the potential harms of overdiagnosis and the importance of appropriate disclosure. Professional societies could develop endorsed disclosure protocols, clear documentation guidelines for communication decisions, and training in nuanced counseling approaches. The goal should be to shift from defensive practice patterns toward standards that genuinely prioritize patient welfare while maintaining professional integrity and trust in the provider-patient relationship.

At the policy level, several changes could help mitigate overdiagnosis:

1. Development of consensus guidelines for disclosure thresholds based on clinical significance
2. Incorporation of communication ethics into obstetric training programs
3. Quality metrics that consider appropriate non-disclosure as potential good practice rather than focusing exclusively on detection rates
4. Patient education materials that adequately explain the concept of overdiagnosis and natural variation

The ethical considerations surrounding disclosure practices in fetal medicine manifest differently across diverse healthcare systems and cultural contexts worldwide. In some systems, practice norms favor comprehensive disclosure regardless of clinical utility, while in others, particularly those with strong social support structures like those in Scandinavia, threshold-based approaches to disclosure may be more common. Cultural contexts further influence these dynamics—societies emphasizing individual autonomy may prioritize complete information sharing, while those with more communitarian or family-centered values might be more accepting of calibrated information delivery that considers maternal well-being. Religious and cultural beliefs about pregnancy and fetal development also influence how uncertain findings are perceived and processed. Additionally, resource considerations in various healthcare systems create different practical imperatives, where the allocation of follow-up monitoring must be weighed against competing healthcare needs. These international variations highlight the need for culturally sensitive and context-appropriate guidelines rather than a universal approach to disclosure practices.

Conclusion

The case of antenatal hydronephrosis illuminates a broader ethical challenge in fetal medicine: balancing the benefits of early detection against the harms of overdiagnosis and unnecessary medicalization. Current disclosure practices, while respecting parental autonomy in principle, may paradoxically undermine well-being by inducing anxiety about findings that are likely to resolve spontaneously.

We argue for a more nuanced approach to communication—one that considers the psychological impact of disclosure, the limitations of prognostic knowledge, and the power dynamics inherent in medical communication. By establishing thoughtful thresholds for disclosure, contextualizing findings appropriately, and engaging patients in collaborative decision-making, practitioners can mitigate the harms of overdiagnosis while preserving the benefits of prenatal detection for conditions requiring intervention.

The ethics of communication in fetal medicine ultimately requires balancing competing goods: the right to information, the imperative to avoid harm, and the need to preserve pregnancy as a primarily human rather than medical experience. Finding this balance demands ongoing dialogue between practitioners, ethicists, and—most importantly—the patients whose lives are shaped by these practices.

Acknowledgments

None.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

1. Ismaili K, Hall M, Donner C, et al. Results of systematic screening for minor degrees of fetal renal pelvis dilatation in an unselected population. *American Journal of Obstetrics and Gynecology*. 2003;188(1):242–246.
2. Morin L, Cendron M, Crombleholme TM, et al. Minimal hydronephrosis in the fetus: clinical significance and implications for management. *The Journal of Urology*. 1996;155(6):2047–2049.
3. Sinha A, Bagga A, Krishna A, et al. Revised guidelines on management of antenatal hydronephrosis. *Indian Journal of Nephrology*. 2013;23(2):83.
4. Dudley JA, Haworth JM, McGraw ME, et al. Clinical relevance and implications of antenatal hydronephrosis. *Archives of Disease in Childhood Fetal & Neonatal*. 1997;76(1):F31–F34.
5. Beauchamp TL, Childress JF. Principles of biomedical ethics. Oxford-New York, Editura Oxford University Press; 2019.
6. Hofmann B. Diagnosing overdiagnosis: conceptual challenges and suggested solutions. *Eur J Epidemiol*. 2014;29:599–604.

7. Brodersen J, Schwartz LM, Henegha C, et al. Overdiagnosis: what it is and what it isn't. *BMJ Evidence-based Medicine*. 2018;23(1):1–3.
8. Sidhu G, Beyene J, Rosenblum ND. Outcome of isolated antenatal hydronephrosis: a systematic review and meta-analysis. *Pediatr Nephrol*. 2006;21:218–224.
9. Lee RS, Cendron M, Kinnamon DD, et al. Antenatal hydronephrosis as a predictor of postnatal outcome: a meta-analysis. *Pediatrics*. 2006;118(2):586–593.
10. Nguyen HT, Herndon CA, Cooper C, et al. The Society for Fetal Urology consensus statement on the evaluation and management of antenatal hydronephrosis. *Journal of Pediatric Urology*. 2010;6(3):212–231.
11. Brunia CHM. Neural aspects of anticipatory behavior. *Acta Psychologica*. 1999;101(2–3):213–242.
12. Knutson B, Greer SM. Anticipatory affect: neural correlates and consequences for choice. Philosophical Transactions of the Royal Society of London. *Series B, Biological Sciences*. 2008;363(1511):3771–3786.
13. Harding LJ, Malone PSJ, Wellesley DG. Antenatal minimal hydronephrosis: is its follow-up an unnecessary cause of concern? *Prenatal Diagnosis*. 1999;19(8):701–705.
14. Thomas DFM, Madden NP, Irving HC, et al. Mild dilatation of the fetal kidney: a follow-up study. *Br J Urol.* 1994;74:236±239.
15. Martinez-Zamora MA, Borrell A, Borobio V, et al. False positives in the prenatal ultrasound screening of fetal structural anomalies. *Prenatal Diagnosis*. 2006;27(1):18–22.
16. Goel P, Agrawal V, Srinivasan RB. Management, outcome, risk, and expectation classification for structural fetal anomalies to aid antenatal counseling: a systematic review. *Journal of Indian Association of Pediatric Surgeons*. 2024;29(4):309–318.
17. Langfred CW. The autonomy trap: a cognitive perspective on the negative effects of individual autonomy. *Academy of Management Proceedings*. 2008(1):1–6.
18. Rothman BK. The tentative pregnancy: How amniocentesis changes the experience of motherhood. 1986.
19. Aronowitz RA. The converged experience of risk and disease. *Milbank Quarterly*. 2009;87(2):417–442.
20. Hofmann B. The technological invention of disease. *Medical Humanities*. 2001;27(1):10–19.
21. McCoyd JLM. Authoritative knowledge, the technological imperative and women's responses to prenatal diagnostic technologies. *Culture Medicine and Psychiatry.* 2010;34(4):590–614.
22. Benn PA, Chapman AR. Ethical challenges in providing noninvasive prenatal diagnosis. *Current Opinion in Obstetrics & Gynecology*. 2010;22(2):128–134.
23. Baltas A, Jurgen Habermas. Moral consciousness and communicative action. Translated by Christian Lenhardt and Shierry Weber Nicholsen. Cambridge, MA: MIT Press; Philosophy of Science. 1990;60(3):521–523.