

Forensic Law in Hypoglycaemia-2

Derek C Beatty¹ & Dr. Christina G Yap²

¹ University of Edinburgh, and Aston Clinton Scientific Ltd. UK

² Monash University, Malaysia

Correspondence: Derek C Beatty, University of Edinburgh, and Aston Clinton Scientific Ltd. UK.

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Abstract

We start 2023 with the sad statistic that a 39% rise in the number of children needing help for serious Mental Health including eating disorders have been statistically analysed from NHS data with 1,169,515 under 18's referred for mental health treatment in 2021/22 compared to 839,750 in 2020/21 and 850,741 referrals in 2019/20. Can Hypoglycaemia Unawareness offer possible understanding of this sad disclosure to help children, youths, and families?

Keywords: hypoglycaemia, neuroglycopenia, insulin, diabetes, Addison's disease, Addisonian adrenalin crisis, thyroid disease, endocrinology, temporary mental health impairment, statute law, legal issues with hypoglycaemia and neuroglycopenia, fast acting insulin, slow acting insulin, glucose, fast acting glucose to treat hypoglycaemia, hypoglycaemia unawareness, Purkinje cells, stiff person syndrome, FASD Foetal Alcohol Spectrum Disorder, Sheehan syndrome or postpartum hypopituitarism

1. Case Study

When shared to the Maternity Ward Environment can the near fatal Hypoglycaemia and Neuroglycopenia Event 23 February 1994 and Forensic journey thereafter add to understanding of Maternity Unit Tragedy and need for cause knowledge uplift to address Immunogenic Genetic Inherited Addison's Disease, Diabetes, Vascular Cardiac Risk, Alcohol, with Purkinje Cell Imbalance in Neurology Stability in babies?

2. A Society Problem

The England wide data includes children who were suicidal, self-harming, suffering serious depression or anxiety, and those with eating disorders. (Source Jane Kirby, Health Editor, Ian Jones PA Media). NHS Digital data analysed by

PA shows hospital admissions for eating disorders are rising amongst children and young adults. Hospital admissions in 2021/22 were 7,719 up from 6,079 in 2020/21 and 4,232 in 2019/20. This is a rise of 82% over 2 years. April to October 2022 identified 3,456 admissions, up 38% from 2,508 for the same period in 2019 before the Pandemic. 3,011 admissions from April to October 2020 and 4,600 for the same period in 2021 when the full effects of the pandemic were felt.

For people of all ages, including adults, the data suggests 2022/23 could see the highest number of hospital admissions for eating disorders.

From April–October 2022 there were 15,083 admissions compared with 28,436 for the whole of the previous year 2021/22. A year earlier there

were 23,351 and in 2019/20, in 2019/20 there were 20,650 making a 38% rise between 2019/20 and 2021/22.

The chairwoman of the child and adolescent psychiatry faculty at the Royal College of Psychiatrists London has stated the rise in referrals for children and young people reflects a whole range of illnesses. Psychosis, suicidal thoughts and severe anxiety disorder require urgent referral. Children and young people's mental health had been getting worse before the pandemic, with increasing social inequality, austerity and online harm playing a role.

When lockdowns and the pandemic struck that really had a negative effect on a lot of children. Those doing well became vulnerable and those vulnerable became unwell. Children felt untethered from day-to-day life that supports them and seeing their own parents struggle and that collective heightened sense of anxiety and loss of control we all had really affected children.

The chairwoman of the eating disorder facility at the college has identified patients at the front line to be severely ill leaving services struggling to meet demand.

A number of factors affect a child's chance of developing an eating disorder such as Genetics, social media, anxiety, including from the pandemic, and weight loss advertising.

Data shows that Anorexia is the most common eating disorder leading to hospital admission among all ages with 10,808 admissions in 2021/22.

Bulimia is next most common, with 5,563, while other eating disorders accounted for 12,893 admissions.

Charities have identified young people are not getting treatment quickly enough and eating disorder may become more entrenched.

The Government and NHS must create a plan to fill workforce gaps which may include allocating trained and supervised non-clinical staff. It is essential eating disorders are spotted quickly to ensure young people are signposted to support at the earliest opportunity.

The NSPCC National Society for Prevention of Cruelty to Children has identified the figures to be alarming and is sadly reflected in conversations with Childline which delivers tens of thousands of counselling sessions every year to children and young people who are

self-harming. Suffering depression or anxiety, experiencing suicidal thoughts and have eating disorders.

The Department of Health and Social Care spokesperson saying 'Improving eating disorders services is a key priority and we're investing £53 million per year in children and young people's community eating disorder services to increase capacity in 70 community teams across the country. It is claimed that £2.3 billion a year is invested into mental health services, meaning 345,000 children and young people will be able to access support by 2024 and aiming to grow the mental health workforce by 27,000 more staff by this time too.' (Source PA news)

3. Survival from a Near Fatal Hypoglycaemia Event 1994

The move forward in 2023 from 'Forensic Law in Hypoglycaemia 1' 2022, to 'Forensic Law in Hypoglycaemia 2' 2023, adds to 28 years investigation since 1994 as legally advised to the author in 1994. A serving police constable assigned to Hertfordshire Constabulary as a Village Police Constable for Bricket Wood, St Albans, PC PN, previously attached to London Metropolitan Police Drugs Squad, advised the author how to investigate this unique event as later recognised by other senior officers in Hertfordshire Constabulary, places a total burden of responsibility for Health and Safety compliance with NHS England and the Home Office, London, to thoroughly investigate the errors and breaches in law which have occurred for 29 years by suspected deliberate alleged criminal conduct against victims of this Clinical Hypoglycaemia debacle. On the balance of probability unnecessary loss of life to NHS England patients may have occurred whose lives may have been saved had the observations and collected evidence been accepted for placement for the attention of the Judiciary on 24 November 2000 before HH Judge Teague identified by Counsel as a matter of Public Concern.

The Mental Health issues of an 11-year-old child in 1994 was advised to be referred to be seen by a Child Psychiatrist in the Appeal Court, Royal Courts of Justice, London, on 27 March 1996 by Lord Justice Butler-Sloss and Mr Justice Wall and a Child Psychiatrist Report placed with the Court organised through the Official Solicitor to the Supreme Court, London.

On 13 July 2000, 3 days after the child's 18th birthday, the Trafford Court was convinced to believe the suspected conspiracy to prevent parental access to the child by the father to help the child, now an adult, to receive correct NHS England Treatment to address suspected Genetically Inherited family Addison's Disease from the mother diagnosed with the condition, poorly managed by NHS Harvey House GP Practice St Albans and Bricket Wood mid 1987–1997 by Munchausen Syndrome by Proxy.

'Forensic Law in Hypoglycaemia' shared 2022 update knowledge in Hypoglycaemia, low Blood Glucose BG when BG falls below 3.0mmol/l exhibiting Physiological Symptoms of Tremor, Sweating and Hunger, requiring prompt glucose treatment input which if not corrected leads to Confusion, Sensory Disturbance and Behaviour Change at 2.0mmol/l described as Neuroglycopenia.

If Blood Glucose BG falls to 1.0mmol/l or 18mg/dl Diabetic Coma is likely to occur leading to unconsciousness and without fast acting glucose severe risk of death. An estimated 600 million patients with Diabetes are thought to exist in the World in 2022 and an estimated 4.5 million in the UK. It is estimated 10% of Diabetes patients are T1D Type 1 Diabetes Insulin Dependent and 90% T2D Type 2 Diabetes Patients non-insulin Dependent. Many T2D Patients may require Insulin Treatment several years after diagnosis.

Does Society really understand the daily burden the diabetes patient faces and the need if things go wrong to provide emergency patient support or the need for A1 Red Alert Emergency support in a hospital, and Paramedic Ambulance support in the Community? This is identified in the UK alone as over 95,000 Emergency Diabetes Hypoglycaemia Calls every year, many of which are potentially avoidable with better understanding and education with family and/or friend witness support.

A new born baby exposed to hypoglycaemia may show physiological signs of welfare concern, today we understand more. In 1994 Vincent Marks in his Banting Lecture described Hypoglycaemia as Real or Unreal, Lawful or Unlawful. Legal cases where Vincent Marks as an Expert Witness was invited by the Police in England, and on occasion other countries, was focused on criminal events associated with murder and manslaughter. When tragedy occurs

society and coroner courts ask why an event leading to fatality occurred. A duty of care exists to offer an explanation to learn and prevent reoccurrence. The same applies in near fatal events in Hypoglycaemia with guidance now available.

Since 1994 the author has been curious about the strange comment from his ex-wife that 'Diabetes is not an Illness'. Tragedies in recent years in several Maternity Units in NHS Hospitals in England and study of the Genome Odyssey, Stanford University USA, has led the author to review possible Genetic Inheritance possibilities affecting Hypoglycaemia as a Clinical Science and the Mental Health stigma which appears in certain tragic cases. Is there a missing link from the British Empire Victorian Times linking diet in Southern Asia which may have triggered endocrine diet causation of vitamin deficiency leading to immunogenic deficiency and cellular abnormality environmental health in Purkinje Cell Hypoglycaemia?

Recent ketone type diet in reversal of T2D Type 2 Diabetes with research suggests mental health improvement of psychosis disturbed patients and dual personality often with severe mental health issues. On occasion this may be triggered by PTSD injury alarm event, often undiagnosed, and has today emerged from COVID-19 Pandemic and the dramatic mental health effect on many parts of society. Was the Mental Health approach taken since the 1920's to keep patients in secure unit hospitals the best approach in Health and Safety? Probably not. Part 1 has identified the issues associated with Hypoglycaemia and Unawareness in Diabetes and Addison's Disease. In part 2 we look at certain possible explanations to the cause of tragic loss of life in Maternity Units and long-term health implications in Mental Health of children born to mothers with Addison's Disease, other rare Thyroid disorder issues and issues involving the effects of an alcoholic mother and or father.

4. COVID-19

The Global Pandemic of COVID-19 viral infection which hit the UK in March 2020 has from NHS statistics identified that 25–33% of the patients who sadly died had been diagnosed with Diabetes, both T1D and T2D. Many were identified as obese and unfit. Deficiency in some vitamins was identified especially in patients from Southern Asia and many other countries

where further research and understanding is needed to explore possible prevention of such tragic loss in the future.

A fast track immunogenic clinical scientific race emerged to find a vaccine suitable to prevent loss of life from COVID-19 and scientists rewarded society promptly with a vaccine programme which beyond reasonable doubt saved many lives. The author knew in March 2020 he was at serious risk of COVID-19 infection and with advice and agreement followed Government Scientific Advice and to ensure sensible diet, exercise, hand washing, and other safety recommendations observed on a daily basis. It is questioned as to whether exposure to a mild initial version of COVID-19 may have been contracted with the feeling of being unwell, experience of an unusual low blood glucose hypoglycaemia event and low sodium and potassium levels. Low sodium with electrolyte imbalance had been experienced before and easily corrected with a daily small portion of salted peanuts.

In 2003 the immunogenic allergy issues associated with some cases of asthma and breathing of dust mites had been reviewed by the author when requested to supply nebulisers to treat patients with asthma with many patients experiencing such with poor air quality and house dust particles.

Many cases involving Hypoglycaemia and death are published by Vincent Marks and Caroline Redmond in 'Insulin Murders-True Life Cases' 2007, a most notable being that of Nurse Beverly Allitt, 15 May 1991, when she was found guilty of manslaughter on the grounds of mental inability, but subsequently admitted certain wrongdoing. Forensic Aspects of Hypoglycaemia, Marks, 2019 went into more clinical and scientific detail into suspected causes of death involving Hypoglycaemia with involvement of murder, manslaughter, admission or non-admission of guilt.

The case of Nurse Beverly Allitt, Grantham, England, described as the nurse who killed babies, was investigated from 15 May 1991, and she found to be guilty of manslaughter on the grounds of diminished responsibility. In 32 years we have learnt so much more about clinical medicine and endocrinology. Published clinical science has assisted greatly in health improvement however Vincent Marks work was pre COVID Pandemic. Fast track COVID vaccine

prevention discovery has led to a greater understanding of the immunogenic issues associated with infection. In 1992 the common denominator of a single person, i.e., a nurse, provided a forensic focus in cause identification. There is more to associate with loss of life in a clinical environment than a single person.

Justice must be fair and recent developments and knowledge demonstrate there can be no time limits in the pursuit of justice and detailed forensic factual knowledge requires close scrutiny compliant with Human Rights Law and the Human Rights Act 1998 to ensure fairness to all parties involved.

The World's Worst Medical Mistakes, Fildo 1996, addresses how Aspirin killed children, and Rye's Disease, 1963, identified brain and liver disease, with advice not to be given to children or teenagers with flu or chicken pox. Studies were completed in 1986 following a full survey of research material however the Department of Health suggested no causal link had been identified in children's deaths however in the USA in 1982 warnings against the use of Aspirin in childhood fevers was issued. following the identified link between Aspirin and unexplained child deaths.

Drug tragedy relevant to this discussion can include Thalidomide which affected 8,000 children in 46 countries and more than 400 in Great Britain with Teratogenic malformed children from patient sedative with peripheral neuritis and nerve damage.

When BHI Biotechnology Human Insulin was granted a license on 26 August 1982 to be marketed in the UK it was known there was a molecule difference on the Alanine Chain between Beef Insulin and Porcine Insulin and between Porcine Insulin and Human Insulin. This led to insulin acting faster in lowering blood glucose levels and in some patients this reduction in blood glucose levels leading to complaints to the BDA, British Diabetic Association. Complaints were made to prescribing GP doctors however sadly many were ignored or as suggested by the Diabetes Charity as being too alarming. The suggestion that no causal link causing hypoglycaemia unawareness was questionable at the time. The disclosure of Unexplained Death in Bed of young patients treated with Human Insulin raised serious questions in the media especially in central England where Counsel Opinion was

obtained at cost to the British Taxpayer to assess whether a case in law could be brought against the pharmaceutical companies who had produced Human Insulin and obtained a licence to market the product. The solicitor who organised the arrangement for 900 plaintiffs to be funded to £500,000 to assess the possibility of a Class Legal Action against the pharmaceutical industry did identify from Counsel Advice that where a prescribing doctor failed to advise a patient to reduce the dose as recommended by the MCA Medicines Control Agency by up to 20% and failed to ensure that patients prescribed Human Insulin were provided with Blood Glucose testing kit with proper explanation to the patient and to family members how to test BG blood glucose levels, in effect the Prescribing GP General Practitioner was in error in law with exposure of the patient to ill health and potential personal injury and the NHS GP Practice would in effect be exposed to Criminal Prosecution in breach of the Health and Safety at Work Act 1974 as Hypoglycaemia is identified as temporary mental health impairment in law, those present and failing to summons Red Alert Emergency Ambulance support are potentially exposed to being charged with criminal offences having caused criminal injury to the patient. If a family member, non-Gillick Competent normally identified as being aged 14 or over is affected leading to PTSD injury as a child, then covered up by use of Munchausen Syndrome by Proxy against the non-Gillick Competent Child then those responsible in English Law are exposed to Criminal Prosecution and if found guilty possible imprisonment.

For 28 years the author has found himself to be victim of this alleged criminal conduct with an estimated £275,000 financial loss and family breakdown. Why?

This case is now unique in the fact that as no ambulance was called, and disclosure to the author from his estranged daughter, the observation of Genetically Inherited fear, paranoia, agoraphobia, has been identified, and the HM Crown has asked the author the reason why?

This research identifies the reasons and in law places the blame firmly on the General Practitioners who from mid-1987–1994 prescribed an overdose of the wrong insulin to the author and at the same time failed to address the mental health issues associated with Addison's Disease and create awareness that

Addison's Disease can be Genetically inherited in families from mother to daughter and witnesses to the Hypoglycaemia event 23.2.1994.

Observations made in 2020 addressing cause of tragic diabetes patient deaths in 2020 was identified to involve patient age, weight, BMI Index, BG Blood Glucose levels, BP Blood Pressure levels. Due to the magnitude of the Pandemic, it is recognised post-mortem to identify cause of death in many cases has not been possible however with the knowledge of unexplained Death in Bed Syndrome associated with Hypoglycaemia Unawareness tragic maternity ward loss must address many aspects of forensic pathology post COVID-19.

The general observation that a single nurse may have been responsible for several sad baby deaths from 2016 is in 2022 a potential misunderstanding. Forensic investigation into parent lifestyle, health issues, diet, alcohol, abuse all play an important role in key forensic factual understanding when such deaths occur and in 2022 the possibility of undiagnosed genetic inheritance issues involving endocrinology issues including family Diabetes, Addison's Disease, Cardiac arrest, Stroke, Vascular disease, Neurological Purkinje Cell environmental trauma may all or some these issues play an important role in extraction of exact cause of death. This must also be extended to all the clinicians, nurses, and hospital administration involved in the care of mothers and babies in maternity ward welfare.

The key forensic question in tragic maternity ward tragedy must remove blame culture and address the clinical knowledge and experience of all staff and management involved. The author's investigation has addressed Family Background in Forensic Investigation.

Foetal Alcohol Spectrum Disorder (FASD) Alcohol is a Teratogenic Substance. Of all the substances of abuse including marijuana, cocaine and heroin, alcohol produces by far the most serious neuro-behavioural effects to the foetus (IOM report to Congress 1996). Prenatal exposure is caused by alcohol crossing the placenta and within minutes, the level of alcohol in the foetus' blood reaches maternal blood alcohol levels. Alcohol is a teratogen which can cause any type of physical malformation or neurological impairment which can impair learning and development. This condition is preventable only when there is no prenatal

alcohol exposure. The UK Chief Medical Officer guidance changed in 2016 to a recommendation that:

—No alcohol be consumed in pregnancy and when planning a pregnancy.

5. Permanent and Lifelong Impacts of Alcohol Consumed During Pregnancy

Foetal Alcohol Spectrum Disorder (FASD) is a term used to describe the permanent impacts on the brain and body of individuals prenatally exposed to alcohol during pregnancy resulting in a spectrum of physical, neurological, emotional and behavioural regulation characteristics.

No two children with FASD are exactly alike, either behaviourally or physically.

Some impacts may include:

- Brain structure and neurological differences.
- Attention, concentration and hyperactivity difficulties.
- Academic achievement challenges.
- Speech and language deficits e.g., great expressive but poorer receptive language.
- Working memory and processing speed challenges.
- Adaptive functioning impairments that become more recognisable with age.
- Emotional regulation difficulties.
- Sociable and vulnerable with difficulty making or sustaining friendships.
- Sensory impairments such as vision or hearing or being or sensory sensitivities.
- Oppositional or defensive when requests are made.
- Inconsistent performance - can do something
- Lack of abstract reasoning, cause & effect logic, fails to generalise
- Identity challenges and issues with theory of mind.

Defensive behaviours develop when there is a poor fit between the person with FASD and the support they receive to navigate daily life. There can be issues with disrupted school experiences, vulnerability and exploitation, issues with mental health, legal issues, and difficulties with independence and employment if a young person's support needs are not understood and met. They need early access to a thorough diagnosis, and access to practical and

personalised support and services for individuals with FASD and their families to thrive.

Gifts and Talents Individuals with FASD have their own unique areas that create challenges in their daily lives. They also have a unique set of strengths and gifts that when nurtured and supported, demonstrates their unlimited potential in those areas. Some common personal and skill areas include being caring, articulate, friendly, musical, artistic, creative, practical, athletic, animal skills, nature skills etc. Many who have been well supported are moving into fulfilled adult lives. Some are in professional careers, have attended university and are raising their own children.

6. Prevalence

Foetal Alcohol Spectrum Disorder (FASD) is the most common, non-genetic cause of learning disability in the UK. (British Medical Association, 2007).

International research proposes that between 2%-5% of the population may be affected by FASD (May 2018). Recent research in the UK (Cook 2021) highlights that for planning and commissioning purposes we need to be considering a prevalence rate of 3-4%.

It is often more prevalent in certain populations and whilst it is often quoted that more than 70% of children with FASD have progressed through care services, a rate of over 90% in local services so it is not surprising that many parents are foster, adoptive and kinship carers.

7. Recognition

Often the condition goes undiagnosed or misdiagnosed as autism or ADHD rather than those conditions being recognised as comorbid presentations of FASD. Due to the level of children coming through the care services, attachment disorders are often viewed as the sole cause of presenting signs and symptoms and can lead to misunderstandings about therapeutic support needs. Increasing awareness and understanding of FASD and developing appropriate prevention, diagnostic and intervention services will create brighter futures for all who are affected by FASD in the UK.

8. Diagnosis

Diagnosis warning over alcohol-damaged children. Scotland needs a long-term plan for helping health professionals identify foetal alcohol spectrum disorder (FASD), a new report

has found. The study found very few are trained to diagnose the condition, which is caused by drinking during pregnancy. FASD can lead to a range of physical and mental problems in a baby. An expert has warned some children who have symptoms are instead being diagnosed with other conditions.

Prof Moira Plant told BBC Radio Good Morning Scotland programme: “We do not know how many young people there are with foetal alcohol spectrum disorder in Scotland—they are not identified.

“And if we don’t have the numbers what many health professionals will do, for compassionate reasons, is they will diagnose these children as autistic or as having ADHD because they know there are services in place for these children.”

- The challenges include how to find success despite foetal alcohol spectrum disorder. This was an adopted son’s life changed by alcohol in pregnancy, the ‘Brutal reality’ for alcohol-damaged kids.
- FASD can cause hearing and balance troubles, learning issues, problems developing social skills and impulse control.
- Adoption UK estimates that up to one in 20 people in Scotland could have the condition.
- The author of the Queen’s Nursing Institute Scotland report, Prof Plant, said one of the important indicators was that children have specific facial features.
- But we know only about 10% of children with foetal alcohol spectrum disorder have this specific facial set and therefore 90% of these children go undiagnosed.
- “Many parents report health professionals saying to them ‘It can’t be foetal alcohol spectrum disorder’. They don’t have the facial features.”
- Prof Plant acknowledged the NHS is overwhelmed but added: “The reality is that health professionals are already seeing these children, young people and adults.”
- “You don’t grow out of foetal alcohol spectrum disorder. It is a lifelong condition.”
- “So, these children are already being seen. They are not being diagnosed and therefore the burden on the health service is actually even greater.”
- ‘Inattentive, lazy or disruptive’

- Prof Plant said affected babies tended to be short in length, light in weight and have smaller heads.
- Some also suffer physical harm, such as congenital heart problems and issues with hearing.
- Prof Plant added: “One of the features constantly brought up by parents is that these children often don’t feel pain as much as other children.”
- “So, for instance, if they develop an ear infection, they may not complain about it.”
- If undiagnosed, the expert said ear infections could lead to hearing loss and children being described as “inattentive, lazy or disruptive” when they get to school.
- However, the stark reality is that they may not be able to hear their teacher.
- Prof Plant stated children can lead full lives with the condition, but they do need support.
- She said training was being set up for health professionals, parents and carers, including a dedicated hub at the University of Edinburgh.
- But Prof Plant added: “We need a longer-term plan in Scotland.”
- “Scotland’s relationship with alcohol has always been a close and tortured one and this is one of the results.”
- If there’s a change in routine, it totally throws me.

9. Sheehan Syndrome—Overview

- 1) On 27 March 1996 at the Appeal Court, The Royal Courts of Justice, London, the Health Issues of Genetically Inherited Addison’s Disease was raised before Lord Justice Butler-Sloss and Mr Justice Wall with the legal advice given by order that the Official Solicitor to the Supreme Court be invited to act as Guardian ad Litem for the daughter and the High Court advised and strongly recommended she be seen at the earliest convenience by a Child Psychiatrist and a Clinical Report prepared by the Child Psychiatrist be placed with the Court.
- 2) The person responsible for arranging this referral was the responsibility of NHS Harvey House GP Practice St Albans. The Harvey House GP Practice, St Albans, failed

in 1996 to undertake this High Court Order and on these grounds the NHS Harvey House GP Practice, St Albans, deliberately and with intent obstructed justice, a criminal offence, involving all NHS GP's Registered by the GMC, General Medical Council, to practice Medicine in England. The investigation has identified conduct by all the GP's at the Practice led by a single GP Dr ALA (GMC 2782427) to be responsible.

- 3) In law a public duty of care exists in 2023 for Hertfordshire Constabulary in England to investigate the evidence held by the author and bring criminal charges against all GP General Practitioners still alive in 2023 who practiced at Harvey House GP Practice, St Albans, mid 1987–1996 and against other parties identified at the time who are still alive.
- 4) The ex-wife was born in India in 1941. This raises the question as to whether Sheehan Syndrome could be a link to the Addison's Disease, she was diagnosed with in Australia pre 1979 with the likelihood of Genetically inherited Thyroid disorder in other members of her family.
- 5) Does this explain the possibility that her younger sister when she gave birth to a daughter in South Africa the daughter exhibited child growth issues and poor posture as a child.
- 6) Sheehan syndrome is a condition that happens when the pituitary gland is damaged during childbirth. It's caused by excess blood loss (hemorrhage) or extremely low blood pressure during or after labor. A lack of blood deprives the pituitary of the oxygen it needs to work properly.
- 7) The pituitary gland sits at the base of the brain. It produces hormones that oversee the function of the body's other glands. That's why it's nicknamed "the master gland." This gland is more vulnerable to injury in labor, because it grows bigger during pregnancy.
- 8) When the pituitary doesn't work as well as it should, the glands it controls—including the thyroid and adrenal glands— can't release enough of their hormones. Sheehan syndrome affects production of these pituitary hormones:
 - **Thyroid-stimulating hormone (TSH)** directs your thyroid gland to produce its

hormones, which regulate your metabolism.

- **Luteinizing hormone (LH)** helps regulate your menstrual cycle and egg production, together with FSH.
- **Follicle-stimulating hormone (FSH)** helps regulate your menstrual cycle and egg production, together with LH.
- **Growth hormone (GH)** controls organ and tissue growth.
- **Adrenocorticotrophic hormone (ACTH)** stimulates your adrenal glands to release cortisol and other stress hormones.
- **Prolactin** stimulates milk production.

Sheehan Syndrome is also called **Postpartum Hypopituitarism** diagnosed in ex-wife pre-1979.

10. Symptoms

The symptoms of Sheehan syndrome sometimes start right after childbirth. Or they can come on gradually months or even years later. Women who have very little damage to their pituitary gland might not develop symptoms for several years. Symptoms of Sheehan syndrome include:

- difficulty breastfeeding or an inability to breastfeed
- irregular menstrual periods (oligomenorrhea) or no periods (amenorrhea)
- weight gain
- intolerance to cold
- slowed mental function
- loss of pubic and underarm hair
- fatigue or weakness
- fine wrinkles around the eyes and lips
- breast shrinkage
- dry skin
- joint pain
- decreased sex drive
- low blood sugar
- low blood pressure
- irregular heartbeat

11. What Are the Causes and Risk Factors?

A lack of oxygen to the pituitary gland during childbirth causes Sheehan syndrome. Excess blood loss or very low blood pressure in labor can deprive the pituitary of the oxygen it needs

to function.

Sheehan syndrome is most common in developing nations like India. Today it's rare in the United States and other developed nations, thanks to better medical care during delivery.

Factors that make you more likely to have severe blood loss include:

- placental abruption, when the placenta that nourishes the unborn baby detaches from the uterus
- placenta previa, when the placenta partly or totally covers the cervix (the bottom part of the uterus that connects to the vagina)
- giving birth to a large baby, who weighs more than 8.8 pounds (4,000 grams), or having multiples, like twins
- preeclampsia, high blood pressure during pregnancy
- assisted labor, a forceps or vacuum-assisted delivery

12. How Is It Diagnosed?

Sheehan syndrome can easily be confused with other conditions that cause similar symptoms — especially if the symptoms don't start for many months after you deliver.

Your doctor will start by asking about your symptoms. Your memory of related symptoms—like trouble producing breast milk after delivery—will help your doctor diagnose you.

Tests that help your doctor diagnose Sheehan syndrome include:

- **Blood tests.** You'll have tests to check levels of hormones that your pituitary gland makes. The pituitary hormone stimulation test checks how well your pituitary gland responds to different hormones.
- **Magnetic resonance imaging (MRI) or computed tomography (CT) scans.** These imaging tests check for tumours or other problems with your pituitary gland that can cause similar symptoms.

13. Treatment

Treatment for Sheehan syndrome is to take the hormones your body no longer produces. You'll need to stay on most of these hormones for life:

- **Corticosteroids.** Prednisone or hydrocortisone replaces adrenal hormones.

- **Levothyroxine (Levoxyl, Synthroid).** This medication increases the levels of the hormones your thyroid gland makes.
- **Oestrogen plus progesterone (or oestrogen alone, if your uterus has been removed).** These female hormones help normalize your menstrual cycle. You can stop taking them once you reach the age of menopause.
- **LH and FSH.** These hormones stimulate ovulation and can help you get pregnant.
- **Growth hormone.** This hormone helps maintain bone density, improves your body's ratio of muscle to fat, and lowers cholesterol levels.

A specialist Endocrinologist will oversee your treatment. You'll have regular blood tests to check your hormone levels.

14. Can It Be Prevented?

Good medical care during childbirth can prevent severe bleeding and low blood pressure. Once severe bleeding happens, Sheehan syndrome isn't preventable.

15. Complications

Complications of Sheehan syndrome include:

- **adrenal crisis,** a life-threatening condition in which your adrenal glands don't produce enough of the stress hormone, cortisol
- low blood pressure
- unexpected weight loss
- irregular periods

16. Outlook

Sheehan syndrome can be life-threatening if you don't get treated. With long-term hormone therapy, one should be able to live a healthy, normal life.

Medically reviewed by Alana Biggers, M.D., MPH—By Stephanie Watson on October 19, 2017.

- Causes
- Symptoms
- Diagnosis
- Treatments

17. What Is an Underactive Pituitary Gland?

Your pituitary gland is located on the underside of your brain. It releases eight hormones. Each of these hormones plays a role in how your body

function. These functions range from stimulating bone growth to prompting your thyroid gland to release hormones that control your metabolism.

Hormones produced by the pituitary gland include:

- **Adrenocorticotrophic hormone (ACTH)** triggers cortisol production and the chemical reaction that makes your body produce adrenaline and noradrenaline.
- **Antidiuretic hormone (ADH)** controls your blood pressure and conserves the fluids in your body.
- **Follicle-stimulating hormone (FSH)** stimulates the growth of ovarian follicles in women and sperm production in men.
- **Growth hormone (GH)** makes children grow, and maintains body structure and metabolism in adults.
- **Luteinizing hormone (LH)** is responsible for fertility, puberty, and menstruation in women.
- **Oxytocin** is important in childbirth and lactation. It may also play a large role in human behaviour.
- **Prolactin** has over 300 uses in the body.
- **Thyroid-stimulating hormone (TSH)** regulates the production of hormones in the thyroid.

Hypopituitarism occurs when your pituitary gland does not release enough of one or more of these hormones.

18. What Causes an Underactive Pituitary Gland?

Trauma may cause your pituitary gland to stop producing enough of one or more of its hormones. For example, if you had brain surgery, a brain infection, or a head injury, may affect your pituitary gland. Certain tumours can also affect the function of this gland. These include:

- brain tumours
- pituitary gland tumours (a common cause of hypopituitarism)
- hypothalamus tumours

Some other possible causes of hypopituitarism include:

- sarcoidosis (a chronic lung disease)
- hemochromatosis (a hereditary disease

characterized by too much iron in the body)

- histiocytosis X (a rare autoimmune disorder where immune cells attack the organs)
- stroke (cerebrovascular accident)
- tuberculosis
- lymphocytic hypophysitis (an autoimmune disease characterized by inflammation of the pituitary gland)
- blood loss during childbirth (Sheehan syndrome)
- radiation treatments
- traumatic brain injury in new-borns, infants, and children

There may also be other causes of hypopituitarism. And in some cases, hypopituitarism, the cause may be unknown.

19. What Are the Symptoms of an Underactive Pituitary Gland?

The symptoms of hypopituitarism depend on which hormones your pituitary gland is not producing enough of. For example, if the pituitary gland does not produce enough growth hormone in a child, they may have a permanently short stature. If it doesn't produce enough follicle-stimulating hormone or luteinizing hormone, it might cause problems with sexual function, menstruation, and fertility.

20. How Is an Underactive Pituitary Gland Diagnosed?

If your doctor thinks you may have hypopituitarism, they will use a blood test to check your levels of the hormones the pituitary gland produces. They may also check for hormones your pituitary gland stimulates other glands to release.

For example, your doctor may check your T4 levels. Your pituitary gland doesn't produce this hormone, but it releases TSH, which stimulates your thyroid gland to release T4. Having low levels of T4 indicates you may have a problem with your pituitary gland.

Your doctor may prescribe specific medications before doing blood tests. These medications will stimulate your body's production of specific hormones. Taking them before the test can help your doctor better understand your pituitary gland function.

Once your doctor determines which hormone

levels are low, they must check the parts of your body (target organs) those hormones affect. Sometimes, the problem isn't with your pituitary gland, but rather with the target organs.

Your doctor may also perform imaging tests, such as a CT scan or MRI scan on your brain. These tests can help your doctor figure out if a tumour on your pituitary gland is affecting its function.

21. How Is an Underactive Pituitary Gland Treated?

This condition is best managed by an endocrinologist. There is no single course of treatment because this condition may affect several hormones. In general, the goal of treatment is to bring all your hormone levels back to normal.

This may involve taking medications to replace the hormones your pituitary gland is not producing properly. In this case, your doctor will need to check your hormone levels regularly. This allows your doctor to adjust the doses of medications you're taking to make sure you're getting the correct dose.

If a tumour is causing pituitary problems, surgery to remove the tumour may restore your hormone production to normal. In some cases, getting rid of a tumour will also involve radiation therapy.

22. Conclusion

This case identifies Hypoglycaemia to be a complex medical and legal issue where research is required to address misbeliefs and misunderstanding in the clinical science of hypoglycaemia in Endocrinology such as Diabetes, Addison's Disease, and Thyroid Disease.

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Prima facie evidence suggests management of information by the MCA and the BDA British Diabetic Association did not address nor involve whether or not GP's were or were not right in prescribing it. Errors in law has left some patients with T1 Diabetes at risk of poor health and put lives at risk (Corby).

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